NATIONAL PETROLEUM NEWS

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Department Stores for Auto Servicing Planned for 200 Cities

By Ward K. Halbert
N. P. N. STAFF WRITER

CHICAGO, Sept. 27

"HAVE you had your breakfast?" B. K. Gillespie, who is founder, vice-president and general manager of a chain of service stations that bear his name, inquired of an early caller at his office in St. Louis one morning last week.

"Yes, I ate at the hotel," replied the caller, somewhat taken off his feet by the unusual question.

"You had all your breakfast at the hotel when you could have gotten a canteloupe at a fruit store, eggs at the produce market, rolls at a bakery and coffee at a soda fountain. But then you were probably in a hurry and wanted to do it all at once.

"Everybody seems to be in a hurry these days. Nobody has time to shop around all over town for what they want. That is the secret of our business. We give the automobile owner everything he wants for his car, all in one place; just like you had breakfast. Come with me and I will show it to you."

Photographers have tried to get a good picture of the Gillespie station, but it is too big. The photographs show only a huge dome and some smaller, adjacent buildings. A better idea of the station's lay-out can be had by examining the accompanying drawing than from any possible photograph. However, the drawing is not accurate, being only a rough sketch of what is to be found on the street level where most of the business is done.

Mr. Gillespie does not call his establishment a "super service station." He speaks of it in his advertising as "an acre of service," and it is not much of an exaggeration. It really takes an acre of ground to house conveniently the 11 revenue earning departments all assembled on one lot for the convenience of the motorist. Incidentally, the St. Louis station is one of the smaller ones. Gillespie stations in other cities have as many as 14 departments. Here they are:

Automobile laundry deserves first mention because it is the central feature of the station and the greatest revenue producer. Oil and gasoline sales is the department of secondary importance. It is the most conspicuous service, occupying street-front position with a conventional, drive-in filling station of four pumps and motor oil vending equipment.

The lubrication department is third in order, if indeed it does not outrank gasoline sales. The five greasing and oiling pits in the St. Louis station are serving 75 cars a day, average, and the Gillespie station in Los Angeles, which is older, is serving twice as many.

Besides the three main ones there are tire service; battery service; motor and chassis cleaning; brake testing; fender repairing; body polishing; wheel alignment and radio, all in the St. Louis station. Had the available space in St. Louis permitted the others, it would have had also a cleaning and pressing shop, a restaurant and a beauty parlor like the station in Los Angeles and some others.

The station chain is known officially as Gillespie Automobile Laundry Systems and originated in California, but it is a young organization, less than four years old. Already there are 11 stations like the one in St. Louis, or bigger, in operation; 28 are in process of construction and 200 of this general type are contemplated. They will be scattered all over the United States.

The corporation has plans for super service stations adaptable to smaller lots than those now operating. None of the smaller kind has been built, and when one is built it will be in a small town. Thus far no Gillespie station has been built in any except a city of the first class. Stations operating now are in Los Angeles, San Francisco, Oakland, San Diego, Long Beach, Pasadena, Calif., Portland, Ore., Denver, St. Louis, Atlanta and Tulsa. If the Tulsa station is not operating now it soon will be. Atlanta is the extreme southern and eastern outpost.

The extensive system is financed. There are no shares for sale. The ownership includes men whose names are synonymous with big business and successful financing. They got together in the enterprise coincidentally after Mr. Gillespie had started his first unit to operating in Los Angeles. E. H. Kron, well known in Los Angeles, was a customer of Mr. Gillespie's station there, and one day he had Will H. Hays in his car when he drove into the station for service.

TWO HUNDRED new stations for gasoline and oil merchandising and auto servicing are planned for as many cities in this country, based on the principle of concentrating business in one plant, rather than operating through several stations, as the oil companies have done.

Through this principle of concentration of facilities and management, these interests plan to offer a greater number of services for car and motorist, and also, and perhaps more important, to reduce the time necessary to perform a specific service.

For example, the auto laundry in the Gillespie stations turns out a car washing job in 15 minutes. Several of these stations have been operating on the Pacific Coast. The first are now being put into operation in cities elsewhere.

The accompanying article is a description of the station at St. Louis and how it operates.

Mr. Hays (he of the movies) became interested in the enterprise and in turn interested John Hertz, the motor transportation magnate, Leonard S. Florsheim, A. D. Lasker and Edward D'Ancona of Chicago. Mr. Florsheim is president of the organization. Mr. D'Ancona is an attorney and counsel of the company. Mr. Lasker has access to profound publicity advice, being identified with the Lord & Thomas & Logan advertising agency of Chicago. Mr. Kron is a vice-president and Mr. Gillespie, vice-president and general manager.

The Gillespie stations are not tied up with any oil interest. They do not handle their own brands of petroleum products nor do they confine themselves to any company's goods. The St. Louis station sells Sinclair gasolines, and 20 different brands of motor oil.

Each station bargains independently with gasoline distributors in its town for the best deal it can get. And any motor oil salesman who can prove that his product is in demand can get it stocked at a Gillespie station. No motor oils are advertised about the place. If they are well known brands and if the public calls for them, Gillespie has them. The St. Louis station sells about two barrels of motor oil a day.

As the accompanying diagram shows, the automobile laundry is the main feature of the station. It is of the "endless belt" variety but, unlike the other washers that employ a mechanical conveyor, this one is circular. The laundry is under a huge dome. The room is as round as a room can be made conveniently, and at the circumference of the circular floor is a conveyor as wide as a one-way drive.

The conveyor floor is made of slats, 2 by 6 timbers, far enough apart and shaped so that they will not hold water. It makes a complete revolution in 15 minutes and holds 15 cars at once. Thus, under ordinary working conditions, the laundry turns out one washed car a minute at $1.50 each. The conveyor moves in a clockwise direction. On either side of the moving slat floor is a narrow concrete platform where the workmen's tools may be put when idle, so that they will not be carried away to another man's working space.

When a motorist wishes laundry service he drives to the door of the circular room and is met there by a man with a broom. Before he even enters the door his automobile is swept out. All the worst of the inside soil is removed in this way.

Then he drives inside the door onto a large ramp which is stationary. The conveyor moves under it with a clearance of only about two inches. There on the ramp he closes the windows of his car, turns left and drives off the ramp onto the moving conveyor and gets out of the machine.

As soon as the customer is out of the way a man on an elevated platform turns a shower bath on the automobile from three directions, from above and both sides. With the top thus wet, he scrubs it with a brush saturated in soap solution and wipes it clean with a squeegee like window washers use.

By this time the conveyor has moved the car out of reach and it is approached by five men. One raises the wheels off the floor with a portable jack (first front, then back wheels) and the other four wash the wheels and the under side of the fenders clean with streams of water from a high pressure pump.

From there the car moves into the hands of four spongers. They work with sponges and soft brushes on the body of the machine, taking care not to mar the most delicate finish. They use a soap solution first and then rinse.

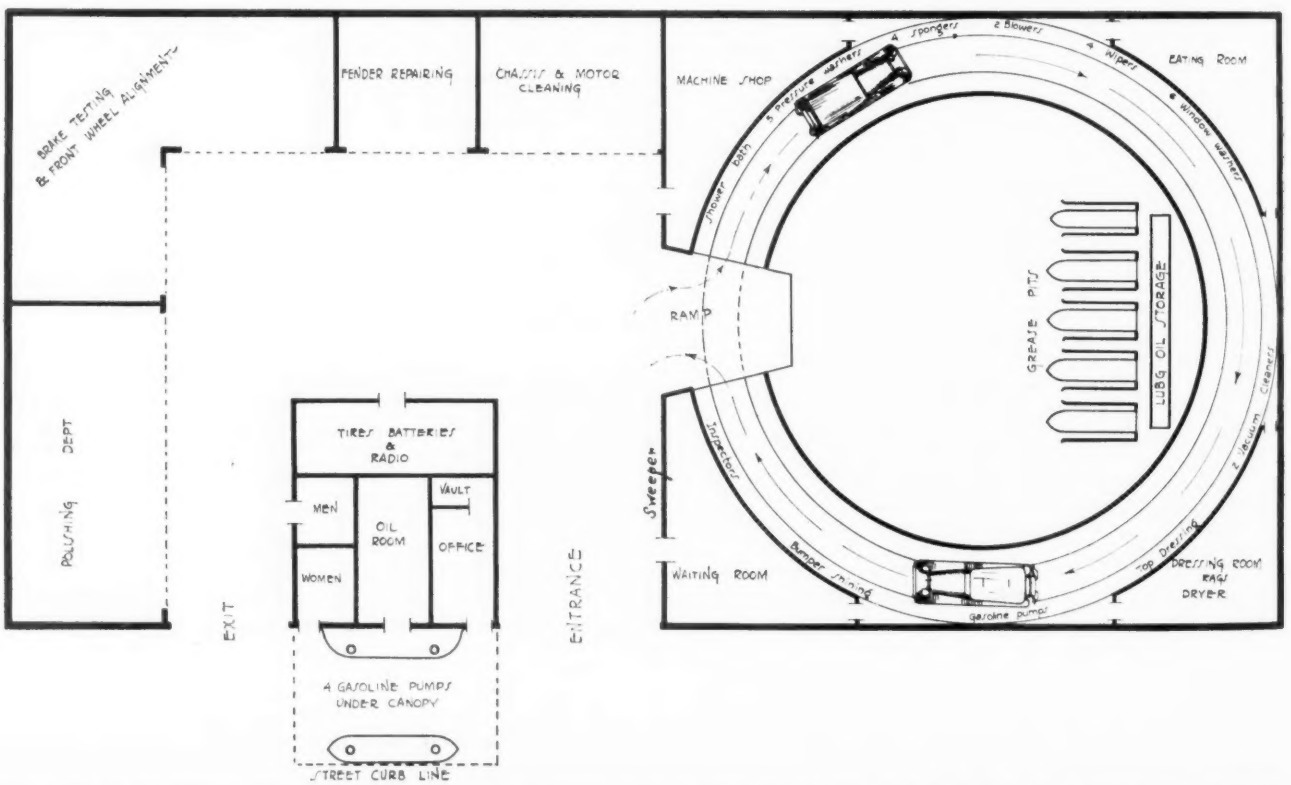
After the spongers come the blowers. Two men with warm air blowers attack the dripping body of the machine and blow off all the surplus water. This is to avoid wetting so many towels in the drying process which comes next.

With the machine blown clear of free water, four more men go at it with turkish towels. When they get through with the body it is completely dry outside.

Then the light work begins. Six girl window washers take charge of the machine and clean the glass thoroughly, inside and out. Really there are eight girls, but two of them do nothing but operate washing machines, wringers and artificial dryers that provide clean rags and towels for the workers.

After the girls have finished, two men enter the automobile with vacuum cleaners. They give the upholstery a complete renovating. It it not a mere gesture but a vacuum job, that takes all the dust out of the coverings.

Then the machine passes under another platform where a man makes



Ground plan of the Gillespie station in St. Louis, showing the circular track on which the car washing is done, a principal feature of these stations

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the waiting room are two inspectors. They look the car over carefully, both sides, inside and out, to see if the work has been done well and put on such finishing touches as they deem necessary.

At three-fourths of the way around, about the time the finishing touches begin to be put on and the car owner is looking the job over, he is approached by an attendant who offers to fill his tank with gasoline while it is on the conveyor.

Approximately 35 people handle the automobile while it makes the 15-minute round on the conveyor. It takes 40 pairs of hands to keep the big station going. There are some attendants in the four triangular compartments about the circle.

The first is a machine shop, a non-profit department where the station's own equipment is kept in working condition. The second is an eating room, furnished with rough seats and tables where employees who bring their lunch can eat in comfort.

The second compartment is called the "rag room." There rags and towels are washed in washing machines, dried and packed to be used again. The fourth one is a waiting room for customers, attractively furnished in wicker and decorated in a pleasing manner.

Inside the big moving platform, opposite the entrance, are five combination pits and racks. They comprise the lubricating oil department. It may be reached in an automobile by simply driving over the stationary ramp which spans the moving conveyor. There is plenty of room under the dome (not occupied by any equipment nor obstructed by posts) for several automobiles to move about, getting to the grease pits and getting away. Greasing prices are in line with those charged by responsible dealers generally.

"The average so-called 'super service station' of California is not to be compared with our establishments. They are modest in contrast," Mr. Gillespie says. "The main point of difference being that our laundries and other service departments are housed for winter, and that each one operates independently of the others.

"We do not work our men first in one department and then in another, depending on where the temporary rush may be. We have a skilled foreman in each department and we work all our men as specialists on a certain job; not as jacks at all trades."

With all the men and machinery concentrated on the laundry in the Gillespie stations, turning out 60 cars an hour for $1.50 each, the job does not pretend to be a complete and

Entrance to the car washing department in the Gillespie system station in Los Angeles. This was the first built in this country. The El Patio Auto Laundry operates the plant under license

perfect cleaning of the mechanical, working parts of the car. Next door to the "big top" is a small compartment, capable of housing about four automobiles, where motors and chassis are cleaned. This service also commands a price of $1.50.

There is no special equipment in this department. Cleaning motors and chassis is treated as a man-power job, not adapted to volume throughput. Two men work in this department and specialize in the work.

Charges for service in the fender repairing department depend on the extent to which the fender is damaged, just as in a garage repair shop. The "front wheels" department in the corner is much like such departments found in first class garages. A Jumbo brake tester is there to tell any motorist the condition of his brakes, without charge. Brakes are adjusted at 75 cents a wheel, $3 for a complete job.

If a motorist learns that his brakes require new lining, the work can be done in this same department. If his brakes are O. K. but his front wheels are in bad alignment, that can be corrected in this same department with special equipment. There is nothing particularly novel about the body polishing department, but it employs two men and makes money.

The tire and battery departments occupy a large space at the back end of the filling station building. There is a sheltered parking space outside their door for the convenience of customers. In conjunction with the battery department is a radio department, where motorists may bring their receiving sets from home and have them put in order. They can even buy a receiving set there.

That radio work fits itself conveniently into an automobile battery service station, is affirmed by a great many operators of private filling stations. They say it is foolish to turn away radio business when the shop is already equipped to perform any kind of battery service. One Chicago service station owner says he averages the sale of one receiving set a day at his small station and that the profits from that one daily item carry the complete overhead of his station. Profits from oil and other merchandise are clear, he says.

"Location," Mr. Gillespie says, "is one of the main considerations in a business like this. In order to set up the machinery to handle automobiles rapidly, space is required. Consequently it has been easier to get suitable locations in western towns where population is scattered than in eastern towns which are built up closer. The St. Louis station occupies all of a lot 145 by 250 feet. The Atlanta station uses a space 200 by 225 feet.

"Down town locations are not desirable," he says. "Traffic conditions are bad and people are busy, for two main reasons. In addition to these, space is harder to find and more costly if it exists at all. The ideal location is a vacant spot somewhere near the center of a city's main apartment house district." The St. Louis plant is at 5836 Delmar avenue, about five miles from down town.

Automobile registration figures have more to do with selecting towns where Gillespie stations are built than anything else. "Where there are 60,000 automobiles, one of these stations is justified," Mr. Gillespie said. "A city with 120,000 automobiles should support two such enterprises."

Model Law Aims at Equity In Gasoline Taxation

MEMPHIS, Oct. 2

SEVEN points on the taxing of gasoline by states were emphasized in a model law presented before the North American Gasoline Tax convention here today by Frank L. Packard, tax attorney for the Standard Oil Co. of Indiana.

These points are: A tax on receipts (sales); a uniform, nominal allowance for shrinkage; excluding political subdivisions other than the state from levying a gasoline tax; excluding refinery and tank farm storage from tax; basing tax on actual amount received in the state; reporting and paying to be made monthly; and the giving of more time for reporting.

Following are paragraphs from Mr. Packard's address in which he discusses these principal points of his model gasoline tax:

"The act should require report and payment of the tax each month. This falls in line naturally with actual practices of the companies with reference to reports, and so there is less chance for mistakes. It should give more time for reporting and remitting the tax, and at the same time it should eliminate harsh penalties for innocent mistakes. In other words, the act should have teeth but they ought not to jeopardize the interests of the honest taxpayer by treating him the same as the crook who literally conspires to default.

"This model act should be what is commonly referred to as a 'receipts tax.' Technically, it would be a sales tax, receipts being used merely for expediency in computing the amount of the tax. It makes the tax much more certain, much more easy of administration, and simplifies checking the amount of taxable gasoline which is returned by the distributor.

"The act should provide a uniform, nominal allowance for shrinkage as the most feasible means thus far discovered for reimbursing the oil companies in part, at least, for their expenses and loss incident to the collection of the tax, and for the far greater reason that although it is a gesture only in the direction of compensation it would hold the loyalty of the tax-gathering oil companies.

"If the state should attempt to collect the tax directly from the ultimate consumer, the added cost of collection and the resulting loss of the gasoline escaping taxation would soar to a percentage several times as great as the amount of shrinkage provided in many of the states of the middle west, namely 3 per cent.

"The basis of the tax should be the amount of gasoline which is actually received in the state. As a matter of law, the state may not base the tax upon the actual volume which leaves the point of shipment without the state, but must base it upon the actual amount which arrives at destination, thus passing out of interstate commerce by coming to rest within the state and mingling with its other goods.

"The act should exclude refinery and tank farm storage for the reason that such storage has not entered the channels of distribution. It is still in the hands of the manufacturer. To tax it there would mean a prepayment of the tax long before the gasoline is definitely started on its way to the consumer. Such prepayment forces the oil companies to make a loan to the state in perpetuity and without interest for the amount of tax thus prepaid.

"While it is a fact that the oil distributor collects upon gasoline which is in storage on the date the law goes into effect, yet as he ships out each car or hauls out each tank truck load, he replaces it with in-shipments so that he always has this average amount of gasoline in storage upon which the state ought not in equity to collect the tax. In other words, the state ought not to force from the oil industry of the ten states in which the Standard Oil Co. of Indiana operates, a loan in perpetuity without interest of from $12,000,000 to $15,000,000. Such a forced loan from the entire industry of the entire United States would reach an enormous total.

"The law should include an 'in lieu of' provision which would preclude the political subdivisions of the state from levying a similar excise upon this commodity. Scores of municipalities in the Middle West are levying a sales tax upon gasoline, which, added to the high rate of some of the states, results in a tax upon gasoline in excess of its original cost. It is axiomatic that no such unreasonable burden can long endure."

"Redistribution of Wealth by Taxation is Modern Radicals Aim," by Frank L. Packard, giving his views on modern taxation is published on page 86 of this issue of NATIONAL PETROLEUM NEWS.

The text of a model gasoline tax law, drafted by the North American Gasoline Tax conference's legislative committee was published on page 102 of the Sept. 5 issue.

Index to Coming Meetings

Oklahoma Oil Jobbers Association, Oklahoma City, Okla., Huckins Hotel, Sept. 28, 29.

North American Gasoline Tax Conference, Peabody Hotel, Memphis, Tenn., Oct. 1, 2, 3.

National Safety Council, Petroleum Section, Hotel Pennsylvania, New York City, Oct. 1 to 5.

Big Four State Jobbers, "Mink League", Hotel President, Kansas City, Mo., Oct. 3, 4, 5.

American Oil Men's Association, Hotel Statler, Detroit, Mich., Oct. 9, 10, 11.

Pennsylvania Independent Oil Men's Association, Penn Harris Hotel, Harrisburg, Pa., Oct. 15, 16, 17.

Wisconsin Petroleum Association, Green Room, Schroeder Hotel, Milwaukee, Oct. 17.

Petroleum Division, A. I. M. E. Tulsa, Oct. 18 & 19.

Lubrication week of Ohio Petroleum Marketers Association, Oct. 20 to 27.

International Petroleum Exposition, Tulsa, Oct. 20 to 29.

California Natural Gasoline Association, Los Angeles, Nov. 13, 14.

Independent Oil Men of America, Stevens Hotel, Chicago, Nov. 19, 20 and 21.

Rocky Mountain Oil & Gas Association, Great Falls, Mont., Nov. 23, 24.

American Petroleum Institute, Stevens Hotel, Chicago, Dec. 4, 5, 6.

Nebraska Independent Oil Men's Association, Municipal Auditorium, Hastings, Neb., Dec. 4, 5, 6.

Wisconsin Petroleum Association, Schroeder Hotel, Milwaukee, Dec. 12.

Second Deep Well at Santa Fe Springs
(By Telegraph)

LOS ANGELES, Oct. 2.—Shell Co. Slusher No. 12 at Santa Fe Springs was completed in the new deep Buckbee zone Oct. 1 for 1300 barrels of 35 gravity oil, with bottom at 5758 feet, producing from 14 feet of zone. This is the second producer from the new zone and will be killed to drill deeper. The well is making about 1,000,000 feet of gas with 400 pounds pressure on casing.

Let's Discuss Marketing Practice Reports Now

IF THE marketing section of the oil business can be put on a sound business basis this fall and winter while price conditions are so conducive to bringing that desirable end about, it will be one of the most important achievements in the history of the industry. One can well call it an achievement if sound methods of operating practices are universally adopted.

Hence the importance of quick development of the thinking of the entire industry to this end and the adoption at the annual meeting in December by the American Petroleum Institute of a definite and far reaching report of its committee on marketing practices, also called a committee on a code of ethics.

Proper action at the Institute's annual meeting this year can aid materially in the reformation of the oil industry's marketing methods, a reformation needed by big and little alike. If the action at that meeting cannot be conclusive, if it cannot be on a report of sound practices on which all can concur, there is every possibility that the industry may be quite laggard in eliminating some of the nonsense it has been indulging in the past few years in the sale and distribution of petroleum products. That annual meeting is the time to bring the industry's thoughts to a proper focus. The opportunity should not be missed.

However, unless there is a material speeding up by the various sub-committees of the Institute's general committee on this subject and a free and open discussion of the whole subject long enough in advance of the Institute's annual meeting, there is fair chance that the opportunity at the annual meeting will be wasted. If so, much harm may be done the whole industry.

These sub-committees are just getting into the subject. They hope to have their conclusions worked out in time to present them to the general committee so the latter may be able to draw a final report in time for the Institute's meeting. But here it is October and the Institute meets the forepart of December. If the sub-committees bring in reports of a widely different character, as now threatens, the main committee may need all the time to the annual meeting and then some to digest them and agree on a final report, if it can.

To present a final report to the Institute's meeting, without opportunity for its study and discussion by the whole industry, would not be effective in bringing about the adoption of the common sense ideas of marketing such a report should contain. The hope of the Institute officials is that the general committee can get out its final report in time for a 30-day discussion of the subject. That is possible but may not be probable, seeing how committees ordinarily work, and in view of the opportunity on this subject for such a tremendous variation in views.

The wiser course would be to start the discussions now, releasing to the industry the reports of the sub-committees as they finish them, even releasing full statements of the meetings of the committees wherein the members may have struggled unsuccessfully to come to a conclusion—W. C. P.

Pay Toilets Would Allow Real Portering

Editor:

Your editorial in the Sept. 12th issue regarding Pay Toilets in Filling Stations covered the ground so thoroughly that very little is left to be said. Filling stations seem to be the only places where toilet facilities could be placed where they would be convenient to the motoring public and, in order that they might be kept in attractive condition, the public should pay.

Nobody would welcome the job of keeping such a place clean but they must be so kept at all times. To date, the regular attendant has not done a good job of it. Neither, in the main, has he done an outstanding job of keeping the station itself clean and attractive looking.

Wouldn't the introduction of pay toilets justify a general porter whose duties would include keeping the toilets clean and attractive and the station as well, inside as well as outside? He could take care of several stations, going from one to another, making several visits to each station every day. In the case of a well patronized station, it might pay to have such a man for that station alone. In rush hours, he could help in many ways outside of his regular duties.

A direct profit cannot always be expected from everything we offer the public in the way of convenience. At five cents a visit, it is doubtful if the investment would be a profitable one in itself.

Properly kept and conducted, it should prove a long step ahead as a trade builder, a good-will creator and the maker of a profitable station, other things being equal.

It has all the earmarks of a big league play.

Yours very truly,
Subscriber.

Editor:

Your recent editorial on service station rest rooms was very interesting to me and I believe that you have the right idea.

I think that more space should be given to this subject and the sooner the service stations are put on the same basis as the hotels and other public rest rooms, the better off we are all going to be.

The privilege is being abused by the traveling public, both the ones on foot and the ones in automobiles. I, for one, would encourage a coin opener or any other proposition that would make the rest rooms serve the purpose for which they were constructed.

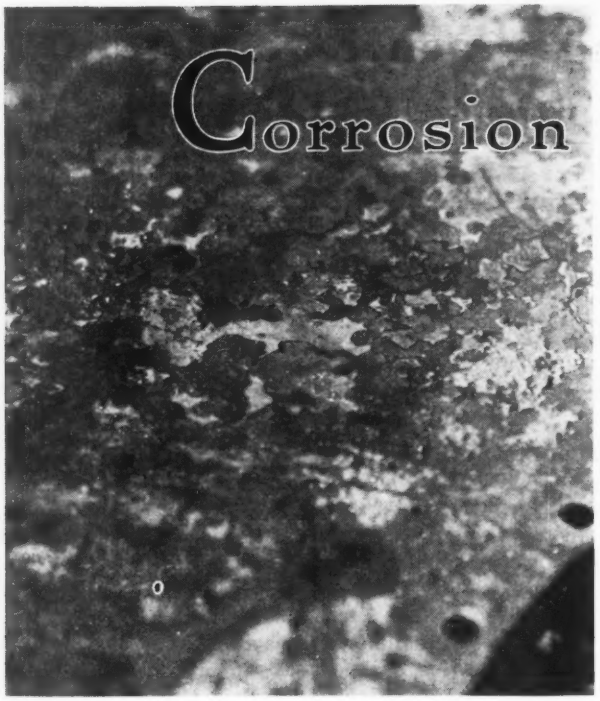
Yours very truly,
WOLVERINE SERVICE STATIONS,
South Haven, Mich., A. D. Dubuisson,
President.

J. E. Smith Oil Co. Sold To Pure Oil Co.

WASHINGTON C. H., Ohio, Oct. 2.—Properties of the J. E. Smith Oil Co. here were sold Oct. 1 to the Pure Oil Co., Chicago. The sale included three bulk stations and nine service stations at Washington Court House, Hillsboro, Leesburg, Greenfield and Milledgeville, all in central Ohio.

J. E. Smith, who with his wife, Mrs. Smith, owned and operated the company, started in the oil business in 1902. He has been marketing oils almost continuously since that time, and in 1918 laid the foundations for his present business.

Both Mr. and Mrs. Smith are well known in Ohio, as well as in national oil marketing circles. The company has been an active member of the Ohio Petroleum Marketers Association and of the Independent Oil Men of America.



Corrosion in Refineries Menaces Profits, Health and Life; Some Suggestions

By E. R. Lederer*

Presented before Petroleum Section, American Safety Council, New York, Oct. 1-5

IN PRESENTING this paper I do not make any claim for new discoveries or original ideas. I have to confine myself to a summary of the corrosion problem as it confronts the refinery executive today. It has become a major problem with the rapid expansion of the refining industry and the consequent development of new oil fields, to take care of the continually growing demand for raw material, i.e., crude oil.

In very few cases the refiner of today is in a fortunate enough position, so he can select his crude. Most refineries with an appreciably large capacity have to draw on several sources of supply, of varying quality and characteristics.

Some of the large new pools developed during the last few years, especially in Texas and Arkansas (like Mexia, Luling, Smackover, Panhandle, and the latest West Texas fields) produce oils which have aggravated the corrosion problem inasmuch as the distribution of the corrosive agents in the products manufactured from these crudes has been quite different from the previously known and refined sulfur crudes, like the old Lima, Mexican, and Californian oils. This evil confronts the production man, pipeline executive and, in a much more diversified and extreme degree, the refinery manager.

Corrosion in refineries is a combination of all the possible corrosion problems, aggravated and intensified by special problems, due to individual operating conditions. We knew in years gone by that certain chemicals and compounds had corrosive action on metals which we had to use in our refinery equipment; with a normal amount of vigilance, maintenance and repair, and counteraction by the use of some chemicals, we were able to operate our refineries (as old fashioned as they might seem to us today) at a fair efficiency and safety from unexpected break-downs.

When Lima, and later on Kansas and Illinois, crude first offered a sulfur problem, it was rather easily overcome by the Herman Frasch copper oxide method. Today this method would not be effective on all crudes, besides being uneconomical, due to the enormous amounts we would have to use on the thousands of barrels of sulfur crudes charged to stills every day.

E. R. LEDERER

Today our situation is much more complicated and difficult because the necessary use of certain chemicals (like sulfuric acids and strong alkalines) for the elimination of sulfur and its compounds, is apt to introduce additional corrosive agents into our operation.

With the depletion of some of the older pools, the crude produced shows an increased percentage of salt-water, containing calcium and magnesium chlorides, which are hydrolized and form hydrochloric acid, often concentrated to a considerable degree during the process of distillation; this represents another menace which attacks refining equipment on another front and necessitates continuous prophylactic measures.

Commercial perfection of several cracking processes, and their increasing use in order to produce sufficient motor fuel for the rapidly growing demand, added additional hazards to refinery operation through corrosion. Sulfur compounds show increased corrosive action at high pressures and temperatures and desulfurization of stocks, which is quite helpful in the distillation process at atmospheric pressure, is insufficient at the high pressures and temperatures applied in cracking; in spite of such pretreatment sulfur is formed in various stages and corrodes different parts of the cracking equipment, presenting a perpetual hazard and source of expense. Revivification and new applications of vacuum distillation of corrosive stocks will, I am sure, present new corrosion problems to us. Recently developed contact

*Vice president in charge of refineries, Texas Pacific Coal & Oil Co.

filtration of acid treated stocks, in the presence of fine clay and steam, intensifies corrosion by erosion or abrasion; material which might be sufficiently corrosion-resisting, cannot withstand the ever-wearing action of this combined attack.

It seems, therefore, that every new effort toward increased efficiency of operations, larger yield, new and improved products of better quality, is confronted with new handicaps of a chemical and mechanical nature, which demand just as much attention and study as the development work itself—and all this mostly due to corrosion.

Economists have stated that corrosion destroys annually from $150,000,000 to $200,000,000 worth of refinery equipment in the United States, equivalent to about 15 cents per barrel of crude produced; we know from experience that in spite of all the highly developed equipment manufactured from corrosion-resisting alloys, it costs from 20 to 30 cents a barrel more to refine "corrosive" crudes, due to increased repair and replacement costs and higher depreciation of the equipment. This is the economic side of the problem.

Very serious is the human phase of all these hazards, involving health and life to our employes. Before we were fully aware of the danger lurking in the poisonous and destructive vapors evaporating from such crudes in storage or produced during distillation, we had to experience serious damage to the health of a good many of our employes and lament even the death of a number of them in the fulfillment of their duties. Naturally, these human and economic phases quickly made us realize the importance of this problem and to strain and combine every possible effort to combat it and solve it.

And today we find a great deal of talent, energy and time of executives, chemists, engineers, and metallurgists, of all the industries concerned and connected with the oil industry, cooperating to overcome corrosion and its hazards.

A great deal of research work has been done and vast sums expended by these industries to overcome these difficulties. Corrosion problems have formed in recent years an important part of the programs of the meetings of all the associations, and scientific societies connected with these industries. Very valuable contributions to our literature have been made along these lines by the scientific staff of these companies.

The government has contributed some very interesting data in a number of circulars and pamphlets; all these publications, including articles in our current trade magazines, really form a text book on corrosion, which ought to be studied and kept up to date by every refiner. In order to better appreciate the hazards of corrosion, it seems advisable to analyze briefly the character and causes of this evil, which gnaws on our equipment and our constitution, day and night, year in and year out.

Corrosion has been explained as the inclination of metals to return to the original ore, forming soft soluble compounds. This softening or dissolving status is also known as "corrosion fatigue." We distinguish:

Atmospheric corrosion, due to the presence of carbonic acid, hydrogen sulfide, sulfur dioxide, and hydrochloric acid in the air. The moisture in the atmosphere containing these corrosive chemicals—often in large quantities—attacks exposed metals and weakens them often to a point beyond safety; deteriorates woodwork and electric insulation, causing short-circuits, burned-out motors and even explosions. Selective painting and coating of metals with corrosion-resisting paints, treating of woodwork with creosote, regular testing and careful examination of electric wiring, conduits and motors will reduce the hazards from this type of corrosion.

Corrosion by water: As you know, water is needed in refinery operation to produce steam and for cooling purposes. Water containing a high percentage of organic or inorganic acids or their salts, or an excessive amount of alkali or solids, will produce poor steam; and such steam will have corrosive action on valves and lines, will cause valves and steamlines to leak or even to give way very unexpectedly. It will pit and weaken fluesheets and firebox sheets by electrolytic action, with consequent damage to operation and hazard for life. A good many boiler explosions have been traced to such corroded sheets and many a man has been painfully scalded due to corroded valves or steamlines. Engines are often put out of commission due to corrosive action of water on water jackets.

Condenser coils or cooling coils submerged under water, tubular condensers or dephlegmators, through which water passes, show accelerated deterioration due to corrosion on the inner and outer walls. In cases where saltwater is used as cooling water, corrosion is increased by electrolytic action; the difference of temperature inside and outside the pipe or tubes plays an important factor in the speed of destruction.

Frequent and careful chemical analysis of refinery water, proper treatment of water, wherever possible *before* it is used for boiler feed water or

Dulling the Teeth of the Monster

DR. LEDERER enumerates in this article the principal types of corrosion found in the refinery and suggests palliatives or antidotes for some of them. They are called palliatives here because in most cases they by no means afford a complete solution of the problems. Here they are summarized:

Atmospheric corrosion—Caused by presence of carbonic acid, hydrogen sulfide, sulfur dioxide and hydrochloric acid in the air.

Palliatives—*Painting and coating of metals with special corrosion-resisting paints; treating of woodwork with creosote; regular testing and examination of electric wiring, conduits and motors.*

* * *

Water corrosion—Water containing high percentage of salts or acids make poor steam which corrodes valves and steam lines causing leaks. Pits and weakens flue sheets, and firebox sheets by electrolytic action sometimes causing boiler explosions. Use of salt water for cooling accelerates corrosion of condensers and so on.

Palliatives—*Frequent and careful chemical analysis of refinery water before used for boiler feed or cooling. Selection of proper metal for coils and tubes.*

* * *

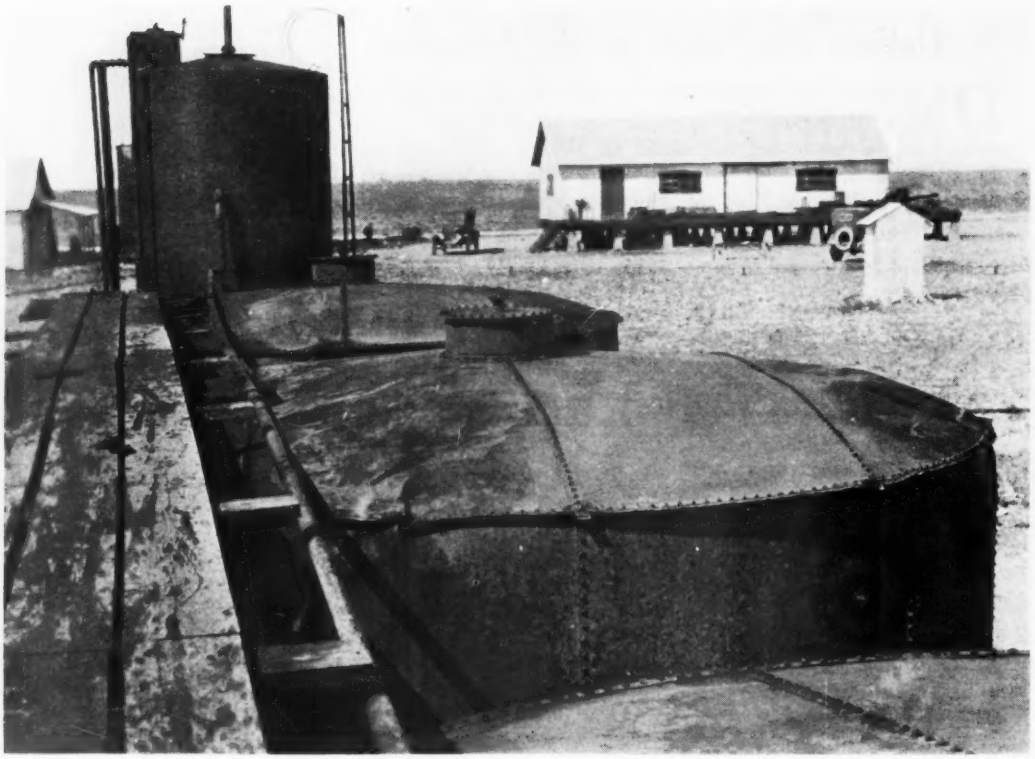
Soil corrosion—Attack on pipes from acids or alkalis in the soil naturally or through seepage of spent acid, sludge, wash water and so on.

Palliatives—*Chemical analysis of soil in which pipe lines are to be laid and coating or wrapping of pipe.*

* * *

Corrosion from chemicals—This is the most serious. It comes chiefly from sulfur contents of crude oil and subsequent formation of hydrogen sulfide and sulfurous acids.

Palliatives—*Neutralizing of charging stocks with ammonia, lime or soda; rigid inspection of materials of equipment at regular intervals by trained inspectors. Extreme vigilance during runs supervised and checked by foreman, plant engineer and superintendent. Special care and attention must be given to installations where large vessels are used for expansion chambers under pressure as they have been known to lose as much as ⅛-inch per month in thickness by corrosion.*



Bolted steel tanks in the Artesia, N. Mex., field. Note how the tank plates are pitted.

cooling purposes, selection of the right metal for coils and tubes, are recommended. It is cheaper and safer to invest the necessary capital for a good efficient water treating or evaporating plant, than to fight continually destruction of material by replacement at a high cost for lost time in operation.

Soil corrosion: A great portion of refinery piping is underground; it is subjected to corrosion by acids or alkalis of the soil proper or contained therein by seepage. The soil might contain strata of alkali or salts, which dissolve in the moisture of the ground, especially after heavy rains; it might contain ashes from fills; seepage of saltwater, caustic, or acid washwater, or weak sulfuric acid from an acid sludge pit in a distant corner of the refinery site, will contaminate the soil until underground pipe, concrete foundations, or tankbottoms resting on such soil, gradually corrode away.

Analysis of the soil for acids or alkali will determine the grade of protection piping should receive. Protective coating and wrapping of varying thickness, in extreme conditions, are recommended. Special care must be used by the operators not to dump acid or alkali on the ground, but catch it in specially provided catchbasins, or in case of a leak in acid lines, the contaminated soil should be replaced by fresh, clean dirt; if any metal is attacked through such seepage, it should be cleaned promptly and recoated or repainted. Dumping of acid sludges within a short distance from any metal equipment should be avoided. These sludges are a recognized nuisance and source of danger. They can be converted into useful fuel or should be removed to a safe distance.

Corrosion due to chemicals: This is the type of corrosion the refiner is mostly concerned with. It is mostly caused by the sulfuric contents of crude oil and subsequent formation of hydrogen sulfide and sulfurous acids, due to the presence of water in the oil and condensation of water during refinery operation, which absorbs sulfur and forms sulfuric acids of varying strength. Sulfur is also introduced into refining operations (as previously mentioned) during the treating process of either topped crude, or distillates of gasoline, naphtha, kerosene, and lubricating oils, or heavy cylinder stocks with sulfuric acids to remove sulfur, asphaltic compounds and other impurities. The percentage of sulfur determined by analysis of crude oils, cannot be considered as a criterion of its corrosive action; it is rather the chemical composition of the organic sulfur compounds and the distribution of sulfur in the different cuts obtained during the process of distillation, temperature and pressure conditions of the distillation, which seems to influence this type of corrosive destruction.

The storage problem of sulfur crudes in refinery tanks is really identical with tank farm storage; the turnover is generally much quicker in a refinery than on a tank farm. This, however, does not prevent sufficient corrosive action on refinery tanks, which has to be considered seriously. Right here we have to mention again the destructive action of salt water mixed with the incoming crude, containing calcium and magnesium chlorides, which are hydrolized to hydrochloric acid. Steel roofs exposed to the combined action of sulfur vapors and acidulated moisture in the vapor space above the oil level, deteriorate rapidly. Iron-sulfide scale is formed, the roof becomes pitted, full of pinholes or even large holes and is ready to collapse.

The iron-sulfide scale drops to the bottom of the tank where the saltwater is settled out and, being of different chemical composition than the steel of the tank bottoms or the first ring, we have two different metals in an acidulated solution, which promptly starts galvanic action and decomposes the metal of bottoms and shell.

An added hazard is the spontaneous oxidation of the rust scale on the inside of the roof, where often, also, free sulfur is accumulated, which creates enough heat to glow and cause an explosion of the oil vapors in this space. Quite a number of such deteriorated and dangerous steel roofs have been replaced by wooden roofs covered with Johns-Manville patented insulation; however, the wood deteriorates rapidly when exposed to hydrogen-sulfide gas and must be well protected by heavy coatings of paint and should be grounded carefully. The bottoms and the first ring of such storage tanks should be protected with asphalt or cement, special nonconductive paints with sufficient elasticity so as not to crack and insoluble in oil and water. I believe the time will come soon when bottoms, first rings, and possibly roofs, will be protected and saved by electro-plating or gunspraying of protective coatings.

During the distillation process heat

is applied in an increasing degree; dissolved hydrogen-sulfide will distill over first; then the salt water will be concentrated, magnesium and calcium chloride decomposed, hydrochloric acid gas formed and distilled over; sulfur compounds will be broken up and new ones formed at different temperatures; they can be found in every fraction of the oil and in a large percentage in the residue left in the still or separator. Corrosive action by these newly formed acids on the equipment is very effective. Shell stills are more subjected to it than pipe stills, where the velocity of the oil through the tubes is generally too high to permit much corrosion, except in return bends, where the natural friction of the flow weakens the metal and corrosion accelerates deterioration. In shell stills special attention must be given to rivets in the vapor space which are subjected to more rapid corrosion than the submerged parts. Treatment of crude with ammonia, injection of anhydrous ammonia in the vaporphase, neutralization of crude or cracking stocks with lime or soda, separation of saltwater and salt under pressure in specially constructed vessels; heavier walls on tubes of pipe stills and on the pipe for vapor lines, cast steel return bends, are some of the protective measures taken to retard corrosion. For condenser coils, heavy cast iron or special alloy pipe is used; tubular condensers, heat-exchangers and coolers are constructed from special alloys; very often excess ammonia vapors entering such condensers with the oil vapors will attack these alloys and such action has to be offset by circulating plenty of clean water to dilute the ammonia sufficiently.

In cracking operation the hazards of corrosion are greatly augmented by high temperatures and pressures. There is very little action by hydrochloric acid, as cracking stocks must be dried carefully; even a small amount of water will cause a serious explosion due to the extreme force of suddenly formed steam in a closed pressure system. In this case the refinery superintendent has to be his own safety engineer, or his equipment and operators are in imminent danger of annihilation. Weakening of the equipment of sulfur corrosion, however, is a continual source of danger. Corrosive action is different

Ravages of corrosion on dome of bolted steel tank, Colorado, Tex., field

in the liquid and in the vapor zone, increasing the hazard. The slightest crack in a valve body, return bend, tube, vapor line or expansion chamber, not caught in time, can cause terrible destruction and loss of life.

The most rigid material inspection of the entire equipment at certain intervals, regulated by the age of the installation, by experienced and trained inspectors, is advisable. Careful examination of the most exposed parts during each shut down and extreme vigilance of operators during runs, directed and checked by foreman, plant engineer and superintendent, are necessary. Records should be kept of the life and condition after each run, of each tube, return bend, plugs, certain parts of the vapor lines, valves, fittings, hot oil pumps, pyrometer wells, etc. Replacement of these parts at regular intervals which, based on experience, will assure a sufficient safety factor, is advisable.

Special care and attention must be given to installations, where large vessels are used for expansion chambers—riveted, welded or both methods combined. We have records that the walls of these vessels have corroded as much as one-sixteenth of an inch per month; these chambers are heavily insulated and inside inspection alone will not disclose corrosion beyond the danger point. A piece of test-steel of the same thickness and grade the vessel is constructed of, suspended in the vessel and carefully weighed and inspected under the magnifying glass after each run, will be a fair indication of the progress of corrosion on the vessel itself. Coating, lining, and electro-plating of the vessels are not very satisfactory; so far, it is not practical to build them out of corrosion-resisting material containing special alloys.

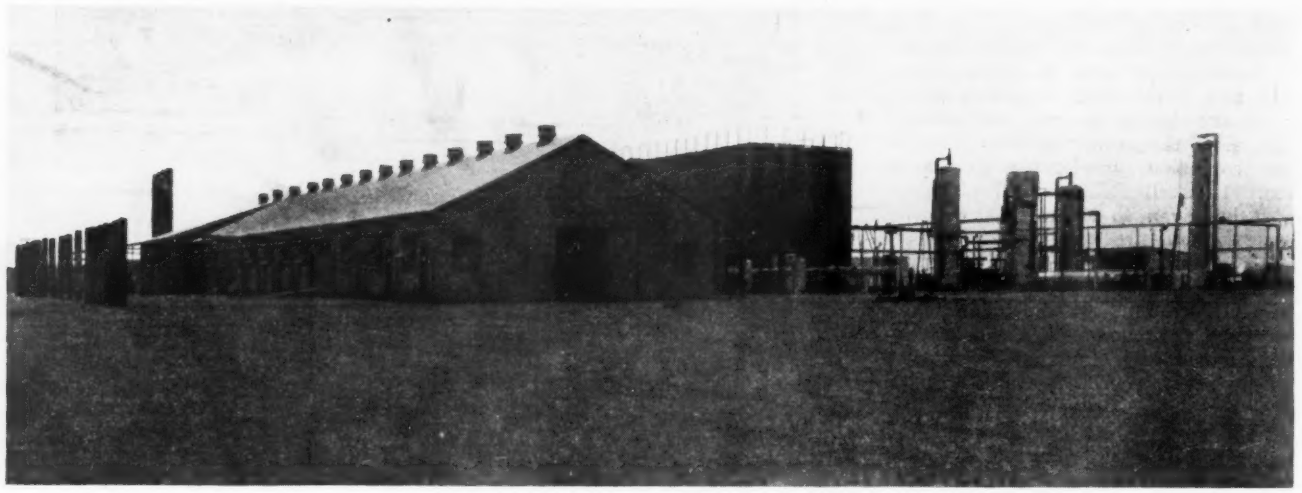
During distillation and treating operations, and much more so during cracking operations of sulfur crudes, considerable volumes of hydrogen-sulfide vapors escape, which are extremely poisonous, quickly cause unconsciousness and death because of the paralytic action on nerve centers, controlling respiration and heart action. The United States Health Department has found that as low as 100 to 150 parts per million affect people; 1,000 to 2,400 parts are fatal. Presence in a hydrogen-sulfide atmosphere deadens the sense of smell, reduces the ability to sense danger and so increases the hazard for the employe.

Corroded 6-inch pipe telescoped and forced inside 8-inch, Earlsboro field

Gallons, Not Barrels, Meant

IN AN article on page 22 of the Sept. 19 issue of NATIONAL PETROLEUM NEWS *it was stated that the cost of running down crude oil to coke had been reduced from $1.26 to 50 cents per 100 barrels. This was a mistake. It should have read "50 cents per 100 gallons," not barrels.*

Controlling Drainage on Competitive Properties in Early Field Repressuring — By Lawrence E. Smith, N. P. N. Staff Writer



Gasoline plant of Roeser & Pendleton Inc. Compressors for returning gas to sand are in same building

BRECKENRIDGE, Tex., Sept. 28 DEVELOPMENT in the oil industry of repressuring methods has been one of slow changes. Originally, restoration of pressure by compressed air or water flooding was practiced only after depletion of natural pressure had reached the final limit or nearly so. Properties were produced under vacuum for years and, when about ready for abandonment, were revived by one of the two standard methods.

Latterly—within the last two or three years—work has been started on repressuring in the early life of the pool. The return of gas, while it is still available, as it is taken out is becoming recognized operating practice and is in a fair way to make great progress from now on. The companies that have pioneered in the work are in position to indicate something of the results obtained, which from every standpoint, including much higher ultimate recovery of oil, have justified the expense incurred.

About the first published article on the subject was that by E. V. Foran, production engineer, Marland Production Co.[1] Mr. Foran contributed his paper to the annual meeting of the American Institute of Mining and Metallurgical Engineers. He discussed work being done in the Turbeville pool, Archer county, Texas, and in the Cook pool, of Shackleford county, Texas. Both have been repressured with gas in the flush stages of production.

REPRESSURING with gas early in the life of oil pools, that is the return of the gas to the producing structure from which it has been taken, along with the oil, is likely to be greatly stimulated as a result of recent discoveries in the course of repressuring work carried on in the Cook pool, in Shackleford county, Tex.

These discoveries have practically established that sand reservoir pressures on competitive offset properties can be controlled, and thereby such properties can be produced at different rates of production, without the property on which production is being held back suffering from drainage.

If applied in practical operations this means eventually a much greater application of the fairly recent principle of the use of the energy in gas in the ground in removing oil from the sand.

Additional data on this method of increasing recovery have recently been published in NATIONAL PETROLEUM NEWS.[2]

In the nine months that have passed since Mr. Foran wrote his paper, much additional information has been collected on the Cook pool, which was briefly described then. This is the largest of the repressuring operations under way. Data supplied by Roeser & Pendleton, operators of the property, and by Marland Production Co., joint owners with Roeser & Pendleton of several of the properties in the Cook pool, show with some positiveness the value of the work attempted.

The Cook pool is about six miles north of Albany in Shackleford county, and at this time is productive over about 1400 acres, with considerable more acreage certain to produce. Drilling has been carried on at a leisurely rate, as there is no desire to build up high production at the present market. The ownership of the royalty under most of the pool by one person, who has at all times been in hearty accord with the policies of the operating company, has been of immeasurable help to the company. A division of royalty interest, with some owners insisting on high production, would, of course, be an obstacle. Roeser & Pendleton, Inc., and Roeser & Pendleton and Marland own 95 per cent of the present production.

Pay sand in this pool averages 20 feet in thickness and is found at depths of 1150 to 1350 feet, depending upon topography and not upon dip of the beds. The sand is loose and unconsolidated over most of the productive territory, being typical of the Cisco series in north central

[1] "Effect of Repressuring Producing Sands During the Flush Stage of Production," Petroleum Development and Technology in 1927, published by A. I. M. E. and NATIONAL PETROLEUM NEWS, Feb. 29, 1928, page 53.

[2] Wagner, Paul, "Pressure Rejuvenation in Powell and Stover fields, Texas," NATIONAL PETROLEUM NEWS, Aug. 1, 1928, page 25 and Aug. 15, 1928, page 51.

Texas. It is of medium texture and, while parts are harder than others, it takes gas freely at all places.

The sand is surmounted by a firm shale caprock. Wells are cased to the top of the sand with 6⅝-inch not cemented. No leakage of water or gas occurs around the pipe, hence cementing is not necessary. Top water is not a problem.

Development started in February, 1926, and on a recent date the status of Roeser & Pendleton, Inc., and Roeser & Pendleton and Marland properties was as follows:

Seven wells producing from an upper sand; one from a deep sand; 203 from the Cook sand; there are 15 input gas wells; four abandoned oil wells, and 29 dry holes.

During the first year of development about 200 producing wells were completed. Some flowed for two to three months after their completion, but the majority were pumpers. Daily initial production varied from 30 to 1500 barrels, with an average of about 125 barrels. Gravity of the oil ranges from 37 to 41 degrees A. P. I.

In the early stages of development the ratio of gas to oil was 350 to 1300 cubic feet per barrel, with an average of about 900 feet. The initial reservoir pressure is not known definitely but is believed to have been about 250 pounds.

Repressuring was not begun immediately after development started. Roeser & Pendleton, Inc., operates a large gasoline plant in the field and for about a year utilized the large gas production from the wells for the extraction of gasoline. In March and April, 1927, a preliminary survey was made of the field to determine the ability of the sand to take gas. Foran in his paper described the early work as follows:

"A representative area in the south part of the pool was chosen for a repressure test and operations were started April 9, 1927. The area in which the tests were carried on showed a rock pressure of 90 to 110 pounds per square inch, these pressures being determined by pressure gauges submerged to the bottom of the full static column of oil. Although an abundance of gas was available at the start of operations, air was injected in the sand for 10 days through a well which had been a regular producer but which was temporarily killed in order to serve as an input well. The input well was surrounded by eight producing wells, four being direct offsets and four diagonal offsets.

Multiplier post at well to provide change in stroke for regulation of back pressures on producing wells

All input gas wells have volume controllers and the amount of gas returned to sand is measured

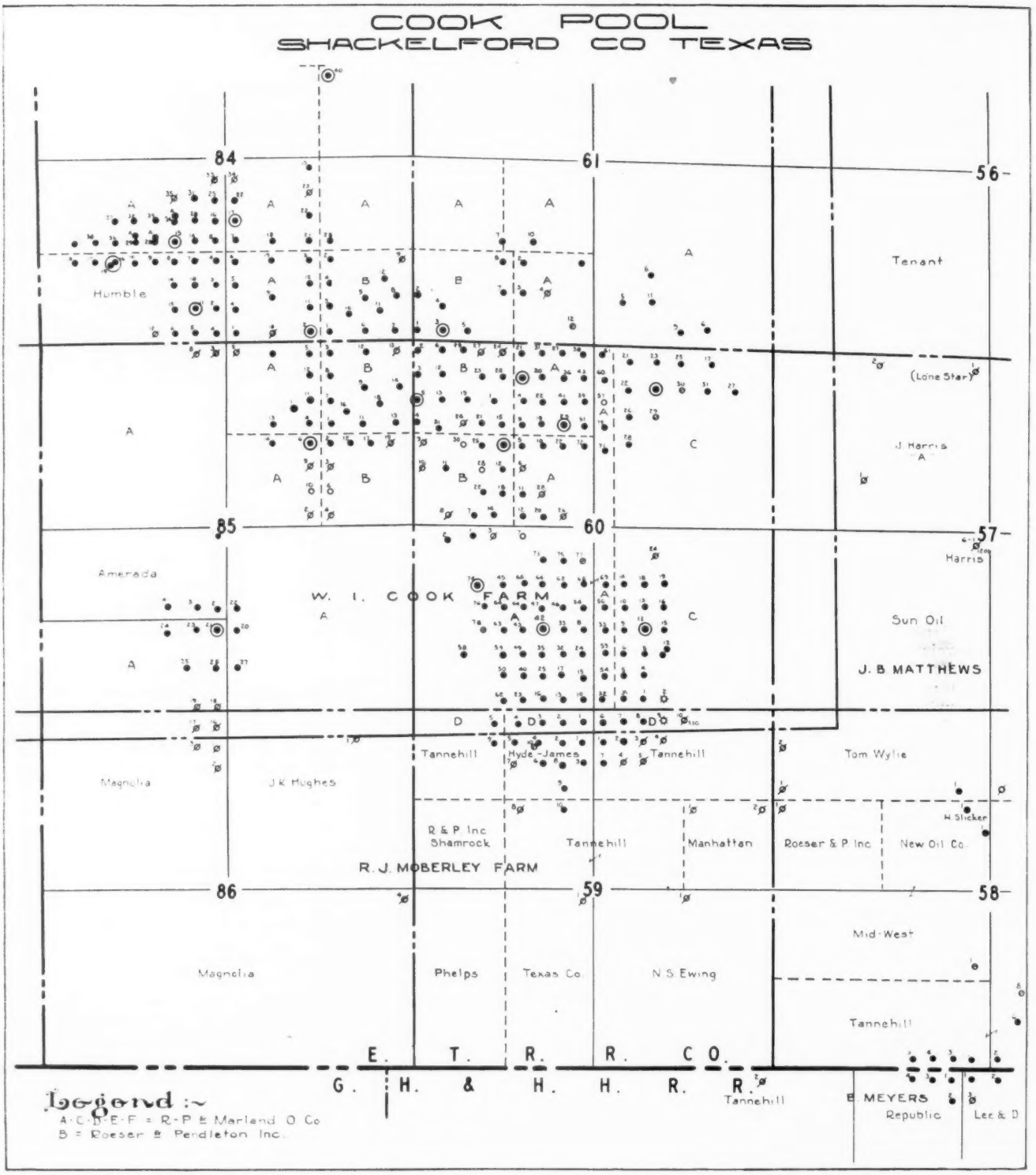
"A two-stage portable compressor served to inject the air into the sand. The input pressure required was 165 pounds. The meters showed that a total of 770,000 cubic feet of air had entered the sand during the first 10 days. The air was then discontinued and residue gas returned to the sand during the remainder of the test period."

The purpose of using air to start is to enable the operator to check on the diffusion through the sand. Analyses of gas in adjacent wells show air content or lack of it. In the Cook pool test, gas from surrounding wells was analyzed for 40 days. The air appeared in six of the eight wells in a highly diffused state, not exceeding 4 per cent during the 21 days it was present in the gas. It appeared 14 days after the start of the test and disappeared 35 days after the start. The ratio of gas to oil did not change during this period, showing that there was no channeling of sand.

There has appeared in this Cook pool operation a principle which seems to inaugurate a new operating method. Its importance to the industry is far reaching and sets aside certain of the fundamental objections that have always been raised against repressuring. Hence, its elucidation will appear here before the description of results obtained.

That principle is the balancing of reservoir pressures on one lease against another. Primarily it is important when offset leases are owned by different companies. Fig. 1 shows the result obtained by cooperative work between Roeser & Pendleton and Marland on one property and the Humble Oil & Refining Co. on an-

This is standard installation for each group of wells pumped by power. One well each day is by-passed into trap at left and gas is put through orifice meter shown in center



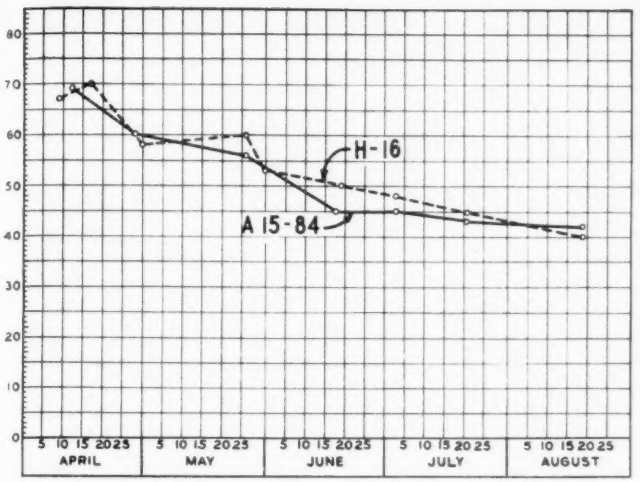
Map of the Cook pool, Shackleford county, Texas. Input gas wells are shown inside circles

other. It is to be noted on this chart that the two wells do not vary more than five pounds in reservoir pressure. That result was not accidental but was due to a carefully worked out method of controlling sand pressures.

Control is obtained chiefly by regulation of the volume of gas returned to the sand. It was assumed early in the work that, if the true reservoir pressures of the input wells could be ascertained, the movements of gas and oil could be controlled, not accurately of course, but workably close. Drainage of one lease by wells on an offset lease is governed by differential in reservoir pressure. If no differential exists, or if it is negligible, drainage will not occur. That is fundamental in oil field development and is the reason why operators complete offsets to a discovery well as quickly as possible.

Assume that two adjoining leases have the same reservoir pressure. One operator desires to produce at a lesser rate than the other. Ordinarily, it is argued, that cannot be done; one must produce at the same rate as the other. In the Cook pool it has been demonstrated that such is not the case. Balancing of pressures on offset leases is possible within a few pounds, so that one operator may prorate production while the other takes all his wells will produce, if desired.

Such balancing is largely obtained by increasing or decreasing the volume of gas returned to the sand. An operator might begin prorating while the neighbor continued to produce at full rate. The latter, of course, would thereby reduce the res-



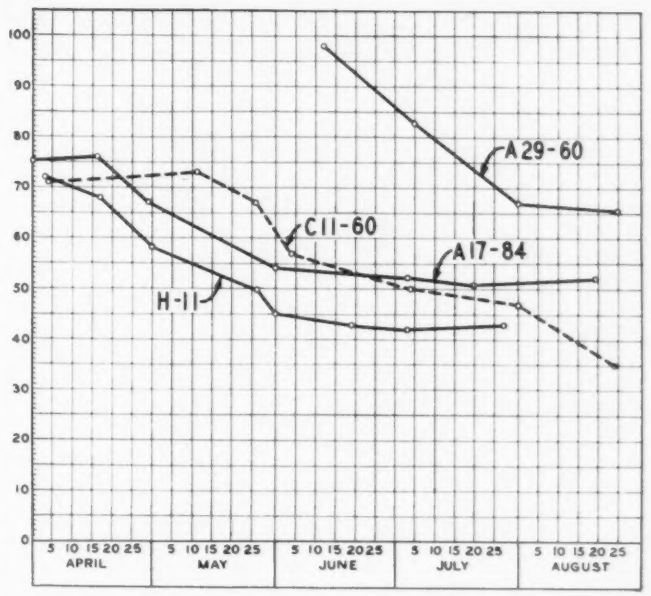


Fig. 1—At left: Results obtained by "balancing" well pressures. The two input gas wells which are kept so nearly the same in reservoir pressure are the Humble Oil & Refining Co., No. 16 and Roeser & Pendleton and Marland Production Co.'s No. 15 in Sec. 84. As shown on the property map, these wells are about 900 feet apart. Fig. 2—At right: Curves on reservoir pressure changes on four wells over a period of nearly five months. Wells H.-11 and A17-84, meaning Humble's No. 11 and well A17 in Sec. 84, shown on accompanying map, are also attempts at balancing of pressures by regulation of volume of gas returned to sand. It will be noted that they generally stay within about 10 pounds of each other. Well C11-60 is adjacent to a dry gas area and pressure has declined steadily because of reduction in volume of gas returned to sand. The same is true of A29-60.

ervoir pressure at greater rate than would the offset who was partly shut in and unless this condition were corrected by restoring the pressure equilibrium by adding a greater volume of gas, the one who was prorating would lose oil. Gas/oil ratios would not be a true index to what was occurring, but reservoir pressures would.

Closed-in tests to determine reservoir pressures are taken on each of the input wells every 15 days. The method by which this is done is simple. Each of the input wells is fitted with tee connection at casinghead, as shown in an accompanying photograph.

The tee is fitted with two valves, one controlling the input gas line and the other closed and idle except when the pressure tests are being made. At such times the valve on the input gas side is closed and an ordinary static recording gauge is fitted into the other side and that valve is opened. In every case there is a sudden drop on the chart from the regular input working pressure to a flattening out on approaching the true reservoir pressure. When the pen retraces its path on the chart, the line thus duplicated shows the reservoir pressure.

The gauges are fitted with clocks which complete the revolution in one hour. Thus the time required to obtain the pressure is from one to three hours, dependent upon how long it takes the pressure in the hole and in the sand to become equal which will compel the line on the chart to duplicate itself.

Accompanying gauge charts show two types of input wells. In one the sand is tight and a working pressure of 175 pounds was required. At the end of an hour after the input gas supply was shut off the pressure had dropped to 50 pounds and the reservoir pressure was finally established to be around 25 pounds. On the other chart, taken on a loose sand well, the working pressure was 75 pounds and it promptly dropped to 48 when the gas supply was cut off.

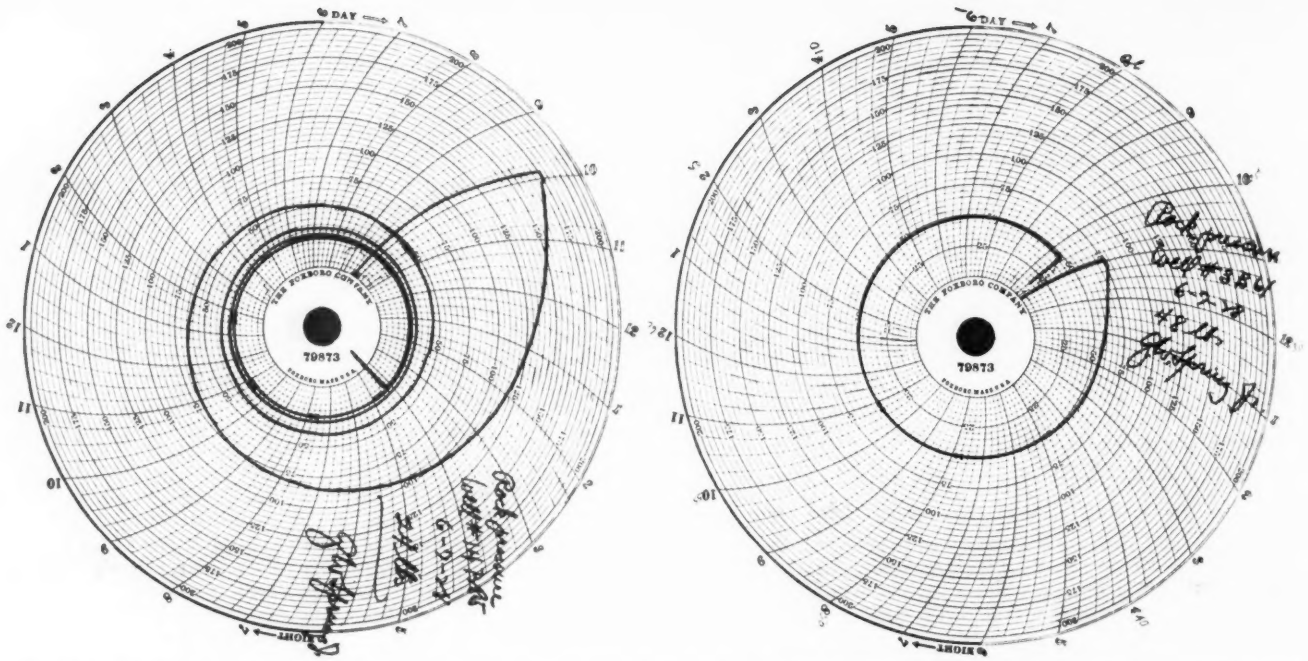
Gas/oil ratio records also are kept regularly, as without them there would be no guide to the efficiency of operation. The control of reservoir pressures, however, is the new technic that has been worked out in the Cook field and the interested companies are now beginning on their attempt to balance pressures all over the field, regardless of whether there are offset owners to consider. A more even reservoir pressure over the field will mean uniformity in producing conditions, more even rates of gas to oil and an all around more efficiently handled property.

Hook-up on intake well showing tee on casinghead into which gauge is set for taking reservoir pressures

A comparison may be drawn between the balancing of reservoir pressures and the balancing of minus pressures in fields operated under vacuum. It is customary for offsetting producers to hold the same vacuum on their properties, recognizing that the one with the highest vacuum gets the most gas. Engineers for Roeser & Pendleton and Marland contend that the same theory should apply to repressure properties—that the sand pressures should be kept in equilibrium as nearly as possible. Free exchange of information with offsetting neighbors on reservoir pressures, of course, is required to make the work effective.

With the control of sand pressures by changes in volume of input gas, attention is paid to control of gas/oil ratios which supplements the former. This form of control is by maintenance of back pressures on the producing wells. After trying other methods, the operators standardized on adjustment of rod stroke so that the producing formation would never be uncovered, but there would always be fluid at a sufficient elevation above the top of the sand to maintain the desired back pressure. It requires about 15 days to determine the efficiency point in back pressures.

Multiplier posts are installed at all wells to provide the change in length of stroke; frequencies of stroke are not disturbed. By changing the length of stroke a critical point finally is found beyond which the well will cease its decline in feet of gas per barrel of oil and will start increasing in gas. Real stability and control of



Charts taken with recording gauge to show reservoir pressure. Pressure drop when input gas is cut off reaches equilibrium at true pressure of sand. These illustrate both a tight and a loose sand input gas well. A one-hour clock was used in taking these pressures, hence figures in margin are really 2½ minute intervals

the movements of gas through the sand are obtained by this method of holding fluid level high enough to maintain proper back pressure against the sand.

It is the aim of the operators to hold the field as a reserve for the future, in the best condition possible. Both Marshall Young, manager for Roeser & Pendleton, and E. P. LaPlant, division superintendent for Marland Production Co., are thoroughly "sold" on this practice, as are their assistants and the men in the field. In several instances considerable production has been held back because the wells were making a disproportionate amount of gas. Three or four wells at this time would make 400 to 500 barrels each per day; they are produced at 100 barrels or less daily. In the restricting of production of oil the amount of gas held back is the guiding factor, of course, and unless the saving is substantial the well is not materially pinched.

Among methods of controlling gas/oil ratios tried on wells in the Turbeville pool and discarded was that of raising the tubing level. It was found that, while this held a fluid column against the sand, the variations in weight of the column, due to pumping off of small wells, disturbed the balance and gas broke through.

Because of the careful records that have been kept by the operators, the Cook pool's efficiency record is easy to read. The table to the right shows what happened from the beginning of 1927 to the end of July this year.

The critical factor, it is to be noted, is the *net* feet of gas per barrel of oil. While the gross ratio is kept under control as closely as possible, a few feet of increase is not alarming, provided the volume is returned in quantity sufficient to keep the net ratio at a low point, as the table shows is being done.

In recording oil and gas production per well, a standardized arrangement of equipment has been made on each lease. An accompanying picture shows the trap, with manifold and orifice meter installation on one lease. All wells on the lease are pumped into the trap with the manifold. One well each day is by-passed into the smaller trap shown at the right in the photograph and from the small trap the oil and water go to the individual gauge tank located at the battery of stock tanks while the gas goes through the orifice meter shown midway between the two traps. The gas is returned to the main gas line from the lease to the compressors. Information thus obtained is utilized in the back pressure control work.

Roeser & Pendleton, Inc., had in operation a large compression gasoline plant at the time it was decided to return gas to the sand. Instead of building a separate plant for repressuring, the gasoline plant building was enlarged and three Clark, two-cycle, 6½ by 10 by 20 units were installed. Each of these has delivery capacity of 1,400,000 cubic feet at 20 pounds intake pressure and 300 pounds discharge.

In practice, gas is taken from the gasoline plant units at 20 pounds, compressed to around 275 pounds. Pressure regulators are installed on all input wells, tests having shown the most effective pressure to use on each well.

Control of water has been an important achievement in connection with the repressuring work. The northwest part of the field is the area where edge water was encroaching on the oil production.

The accompanying map shows that Roeser & Pendleton and Marland have located two input gas wells in the producing area and one to the northeast of these outside the present producing area. The latter well was made an input well chiefly to retard travel of water and the effect of repressuring in this area has been

Month	Daily Oil Bbls.	Ft. Gas Per Bbl. of Oil	Net Ft. Gas Per Bbl. Oil (Output less Input)	Gas returned to sand. monthly, (millions of feet)
Jan., 1927	8,925	755	755	None
Feb., 1927	8,873	746	746	None
March, 1927	8,531	770	770	None
*April, 1927	7,792	797	797	None
May, 1927	5,199	951	951	None
†June, 1927	2,639	1,295	1,295	None
July, 1927	2,244	1,350	1,312	2.6
Aug., 1927	1,910	1,483	1,184	17.6
Sept., 1927	1,790	1,392	868	28.1
Oct., 1927	1,795	1,308	718	32.8
Nov., 1927	1,793	1,269	777	26.5
Dec., 1927	2,007	1,193	747	27.7
Jan., 1928	3,529	924	567	39.1
**Feb., 1928	5,131	800	405	58.7
March, 1928	6,076	883	417	87.7
April, 1928	5,913	963	399	100.1
May, 1928	5,936	1,011	530	88.5
June, 1928	6,187	1,010	587	78.6
July, 1928	6,531	1,018	567	90.2

*Drilling stopped.
†Proration started.
**Proration ended and drilling resumed.

to reduce the water production to the point where it is no factor.

At the start of the repressuring work Roeser & Pendleton and Marland were lifting about 250 barrels of water per day. It now does not exceed 50 barrels per day. Humble Oil & Refining Co.'s property in the same area was producing about 250 barrels of water before restoration of pressure was begun. It has been reduced to about 40 barrels daily.

In selecting input wells, geographical location and productivity of the wells were considered. Poor wells were selected. It was believed that their small production indicated sand tighter than in wells of larger production and the intent is to move the oil from the tight sand to the looser zones, where the fluid travel is greater. It has been proved that the wells that were best producers before repressuring respond best under the gas drive. Further, the areas showing least free gas are the areas of highest concentration of oil and hence are the most responsive to the pressuring.

Summarizing, the work in the Cook pool has demonstrated that pressures in a field and on competitive properties can be controlled in the sand to the point where the question of drainage becomes unimportant. It has shown that a uniform rate of production can be maintained for extended period and that the ultimate recovery can be greatly increased. It has proved that the most economic use to which gas from a gasoline plant can be put is its return to the sand. It has demonstrated that water encroachment can be stopped.

The limits of the Cook pool have not been established and drilling is proceeding in advance of present production. The operators are now preparing to extend repressuring work as the boundaries of the field are moved out and to return to the sand in the new territory every foot of gas not required to operate gasoline and repressuring plants and the pumping powers.

New Oil Companies Chartered

HOUSTON, Oct. 1.—New oil firms chartered at San Angelo, to operate in the west Texas salt basin territory, include the Williams & Williams Drilling Co., the South Plains Oil & Royalty Co., and the Shafter Oil Co. P. H. Williams, J. P. Williams and Mrs. Nannie Mae Williams compose the Williams & Williams Co., incorporated for $10,000. South Plains Oil & Royalty Co., incorporated for $19,000, is composed of J. W. Smith, Glenn R. Lewis and Charles Gibbs. Shafter Oil Co., capital stock $10,000, consists of John L. Bennett, recently of Decatur, Ill., J. V. Cline and H. C. Upton.

246 Displays Scheduled For Tulsa Exposition

TULSA, Sept. 29

TULSA offers exposition visitors this year 600 more hotel rooms than were available last year.

The Tulsa, until the building of the Mayo, the city's largest hotel, has added 200 rooms. Two new hotels, the Alvin, at Seventh and Main streets and the Mincks, at Fourth and Cheyenne, each have 200 rooms.

Even with this much more in housing facilities, exposition officials are setting up a housing organization. It will have offices in the Tulsa and the Mayo hotel lobbies, at the exposition grounds and in the Producers' National Bank lobby.

Besides attending to requests for rooms, this organization, under the direction of a committee of exposition directors, will attend to the validation of railroad tickets. Each office will also be an information booth.

There will be reduced fare to Tulsa, during the exposition—Oct. 20-29—on all roads in the United States and Canada.

Where the fare is $10 or less from Oklahoma, Kansas, Arkansas and Missouri points and $30 or less from Texas points to Tulsa, the open rate will be one and one-third fares. From all other points in the United States and Canada, the certificate plan will be followed. The customer pays a full fare when he starts to Tulsa and is given a certificate, which he validates at Tulsa and thereby secures half fare home.

Railroads are pushing along plans for special trains and special cars. One special train from Fort Worth with 300 people has been assured. J. L. Dellinger, production manager for the Cia. Mexicana de Petroleo "El Aguila," or in other words, the Mexican Eagle company, wrote that a special car would come from Tampico.

The exposition plant is now completed. Since last year's show closed, $45,000 has been spent on improvements. There will be no mud this year, for a half mile of concrete walk, 8 to 20 feet wide, now serves all parts of the grounds, leading past the three principal buildings and the arcade and crossing the open space in the center of the grounds.

Nearly everything not covered by concrete has been given a thick layer of chat and this will be treated with calcium chloride just before the show opens to keep down all dust. The exhibitors, parking space, 90 by 600 feet, has been covered with crushed rock and this also will be kept dustless.

The street car station this year is at the main entrance and taxis and buses will discharge passengers at the gate, on concrete. The entire property will be floodlighted, including 160 acres of free public parking space across the street from the exposition grounds.

A band has been obtained for certain days and radio programs will come in constantly every day in the restaurant, in the Red Cross building and in the court.

Exhibitors this year number 246, which probably will be slightly increased by the time the show starts on Oct. 20. Some 25,000 square feet more space has been sold for this show than last year. Right now the grounds are the proverbial beehive of industry. Six derricks are up and six more are going up. Concrete is being poured for bases for the heavy engine exhibits. One manufacturer alone will have in motion 900 horsepower of gas engine-compressor equipment. Six rigs will be drilling, both rotary and cable tools being demonstrated, with all the up to date specialties.

The personal side of the oil industry will be on display. The Old Timers, of course, have come to be a feature. Through a voting campaign, "Uncle Joe" Evans, president of the Devonian Oil Co., has been elected Grand Old Man of Tulsa. He will be host to all the Old Timers who attend the exposition. On Oct. 23 the Old Timers will meet and organize and will select the Grand Old Man of the world. There will be a public ceremony that afternoon at which the medals will be presented and in the evening the Old Timers will meet at the banquet board.

Following the safety contests—the Fourth Annual Petroleum First Aid meet—on Oct. 22, a banquet will be held at the Mayo hotel in the evening at which the medals will be presented to the winners. On this occasion H. C. Fowler, associate petroleum engineer of the Bureau of Mines, and Charles B. Scott, of the Insull interests, Chicago, will be the speakers.

The Tulsa Purchasing Agents' Association is in charge of arrangements for the oil buyers' group discussion, which will follow a dinner Oct. 23. On the 24th, in the morning, the 12 standing committees of the Natural Gasoline Association of America will meet in the Mayo.

Exposition time has again been chosen by the Mid-Continent Oil & Gas Association as the occasion for the annual dinner. Plans this year are for a round table discussion of industry problems and Secretary H. H. Smith is inviting a number of prominent oil men who are outside the membership of the association.

Review of Late Production News

Daily average domestic crude production made only a slight change for the week ended Sept. 29 when output rose 950 barrels, to 2,509,800 barrels, according to the American Petroleum Institute.

Crude oil imports were 321,000 barrels daily average, a gain of 137,286 barrels over the week ended Sept. 22.

Little River gained 11,450 barrels daily average. St. Louis pool fell off 3000 and Earlsboro 4250 barrels. Seminole area gained 5850 barrels, to 315,000 barrels. Total Oklahoma output was 735,100 barrels, a gain of 3350 barrels.

Winkler county, west Texas, fell off 3700 barrels. Pierce Junction and Hull fields, coastal Texas, gained 2100 and 2200 barrels respectively.

Long Beach, Cal., gained 4000 barrels and Seal Beach 2000 barrels.

Oklahoma-Kansas

THE huge drilling campaign in the St. Louis field of Pottawatomie county, Okla., has been temporarily halted because of shortage of water and the increase in production thereby given a check. Until rains come to end the long dry spell no relief is possible for most of the operators drilling in this pool.

While Little River has apparently passed its peak of production, the state as a whole has not yet gotten its production down to the 700,000 barrels daily figure fixed in the recent Corporation Commission order. Proration has not been put into effect in either Little River or St. Louis pools.

The deduction of 10 per cent from the potential production of properties has been found unworkable because of the constantly changing potential of the leases as new wells come in. A new open flow test is being made now and it is the belief of operators that the rate at which new wells are brought in has been checked sufficiently to permit enforcement of the proration order.

California

THE burning Getty No. 17 well at Santa Fe Springs—burning since Sept. 15 in the busiest part of the field—has failed to halt new field operations, which now total slightly better than 200. Approximately 40 wells are now drilling below 4000 feet, the new Buckbee sand being found at just above 6000 feet. Two wells are near the Buckbee sand.

A few drilling operations in the vicinity of the burning well are idle and also a number of wells producing from the upper Meyer zone.

The crew fighting the fire in the Getty well are tunneling to hit the casing 50 feet underground. The casing will be tapped there and mud pumped into the hole in an effort to kill the well.

A second meeting of operators active at Santa Fe Springs was to be held Oct. 4, being called by the Chamber of Mines and Oil. Further plans will be developed for conserving the expected large gas production from the new producing zone and an operators' committee is expected to be formed.

At Long Beach seven wells were placed on production last week, making 7750 barrels of new production, not enough to offset a decline in the field's output. There are 182 drilling operations in this field, with 55 drilling below 6000 feet, these deep wells being completed at around 7000 feet.

Texas, New Mexico, Louisiana

MOST oil companies owning southeastern New Mexico state leases due to expire in the next 12 months are exchanging them for new five-year leases, on higher rental basis, to defer drilling operations. This represents an extension of the policy to rationalize future production as far as may be possible in the Permian salt basin region of southeastern New Mexico and West Texas.

It is now estimated fully 50,000 barrels daily of West Texas sulfur crude is moving to storage in the salt basin, despite the cutting back of Winkler county production from 175,000 barrels to 150,000 barrels daily under order of the railroad commission, effective Oct. 1. Winkler output is regarded as a softening influence on the crude market, as it has been the policy of West Texas producers to store as little sulfur crude as possible in avoiding tankage programs and offsetting the effects of corrosion.

Increasing production of the O'Brien discovery well of Sid Richardson and others, sec. 50, block F, five miles south of earlier Winkler development, served to emphasize future importance of the new area. Maximum production was 935 barrels daily late in the week.

In the north end of the Winkler area, Southern Crude Oil Purchasing Co. extended production three-quarters of a mile north when its No. 1, tract 88-P, in the center of the northwest quarter of Sec. 28, block B-26, started making 20 barrels an hour by heads at about 2900 feet.

Operation of Sinclair Pipeline Co.'s new gathering facilities connecting the Grayback area of Wilbarger county with its Wichita Falls district system will provide about 12,000 barrels additional crude outlet from the north Texas territory.

Gulf Coastal operations of importance were confined to the South Louisiana division. At Bayou Bouillon, St. Martin's parish, Rycade Oil Co.'s No. 2 state was a 2400-barrel well at 3107 feet. Union Sulphur Co.'s fee No. 732 at Sulphur dome, Calcasieu parish, flowed 2000 barrels daily at 3252 feet.

Wyoming, Montana

TEXAS PRODUCTION CO. has purchased 1000 acres additional to its holding on which the discovery well at Alkali Butte, Wyo., was recently brought in. The discovery is being drilled deeper. Producers & Refiner's discovery gasser at Muskrat, Wyo., is producing about 70 million feet and not yet under control. The Kinney-Coastal and Argo Oil Co. will drill a joint deep test on the Pilot Butte structure, about 30 miles northwest of Riverton, Wyo. New York Oil Co. is doubling its capacity at its combination compression and absorption plant in the Sand Draw field, southeast of Riverton.

Plans for curtailing operations in the Oregon Basin, Wyo., field were discussed here last week and a committee appointed to visit the field, make an investigation, and report at a later meeting.

Michael C. Weiseman et al are drilling their second gas well on the North Casper Creek structure, Natrona county, Wyo.

In the Pondera field, in Montana, there are 15 wells drilling, nine rigging up, two spudding, two on location, and one fishing. Two wells were completed, one producing 75 barrels and one producing 150. In Kevin-Sunburst the best completion of the month was the Hibbing-Sunburst-Faunce No. 6, which was a gusher at 1405 feet, producing 500 barrels.

Roxana Petroleum Corp. Executives Advanced

The photo at the left is U. deB. Daly, who, Oct. 1, assumed the presidency of the Roxana Petroleum Corp., with headquarters at St. Louis. Mr. Daly has long been associated with the Shell organization, being lately assistant to F. Godber, president of the Roxana, and later vice-president.

At the right is F. Godber, who gives up the presidency of the Roxana after holding that position for nine years, to serve on the directorate of the Shell Transport & Trading Co., this position giving him a broader field for the exercise of executive ability. Mr. Godber will shortly leave with his family for London. It is announced he will remain a director in the Shell Union Oil Corp., of New York, thus retaining his contact with Shell activities in this country.

Code of Marketing Ethics On A.O.M.A. Program

CHICAGO, Sept. 29.—Eddie Guest, the Detroit poet, has been added to the list of renowned speakers who will appear before the convention of the American Oil Men's Association in Detroit, Oct. 9, 10 and 11. James A. Gilmore, secretary of the association, also has made it known that a delegation of oil jobbers from Ontario will attend the meeting and space is being reserved on the program for one of them to tell about oil distribution in Canada.

Since the last announcement of the speakers' list, the association has procured the consent of R. H. Grant, president of the Chevrolet Motors Co., to address the gathering on a subject of his own choosing, and C. F. Kettering, director of General Motors Corp.'s laboratory will talk about "Automobiles and the Petroleum Industry."

While the American Petroleum Institute has some rather elaborate machinery at work developing a standardized code of sound oil marketing practices, a committee of the A.O.M.A. has been busy drafting an "abbreviated code." The purpose is to be of assistance to the A. P. I. and to the movement generally, if possible. The main feature of the A.O.M.A. draft will be its naked brevity. Mr. Gilmore says his committee is trying to devise a list of sound business principles couched in the simplest of language.

Five oil jobbers are being chosen to make short talks, preliminary to a general discussion on marketing conditions under the terms of the new quantity discount agreement. The five will respectively represent Michigan, Ohio, Illinois, Indiana and Wisconsin. In Ohio, Standard of Indiana's marketing methods do not affect the trade directly but the influence on the industry at large is felt there.

Wednesday will be "Dixie Day" at the A. O. M. A. meeting. Dixie Distributors Inc., of Michigan and Wisconsin are availing themselves of the convention in Detroit to hold their annual business conclave and will hold some private sessions that will not interfere with the regular program.

The weighted average prices of Oklahoma gasolines for Monday, Oct. 1, will be found in the refinery market table on page 116.

Oil Company Leaders Will Testify in Radio Case

WASHINGTON, Oct. 1.—Men of the first rank in the oil industry will be offered as witnesses before the Federal Radio Commission, on Nov. 13, to show that body that the industry should not be required to go about the business of finding oil, blindfolded. Radio is a vital factor in the hunt for oil structure by means of geophysical instruments.

Walter C. Teagle, W. S. Farish and other big men in the industry, if plans mature, will be offered to show the economic value of the work that can be done and done only by radio. Dr. George Otis Smith of the Geological Survey, men from the Bureau of Mines and from the Bureau of Standards, probably will be called to testify also on the economic and technical phases of the subject.

Fayette B. Dow and Horace F. Lohnes are representing the industry in the matter. The proposition is one of the most acute that has come up in Washington in connection with oil for many a day.

Main street in St. Louis, principal town in the pool of that name

St. Louis, Oklahoma's New Flush Pool, Uncovers True Wilcox Sand

TULSA, Sept. 29

IT IS now admitted by even the most ardent well-wishers of proration that it hasn't accomplished what it was intended to do.

Hope has by no means been abandoned for getting the state's production down to the 700,000 barrels maximum fixed in the corporation commission's order, but it hasn't worked yet. The chief reason is that a method of cutting flush fields 10 per cent hasn't been found yet.

There is proration in the older fields of the Seminole area, but Little River and St. Louis, the flush pools, are making all they can. It is entirely probable that Little River is at its peak of production and a decline can be expected from now on. Most of the drilling has been finished and the wells that have been completed the past two weeks are indifferent producers, swabbing a few hundred barrels initial and requiring air or gas lift to make them perform.

St. Louis continues to be the uncertain quantity in the outlook for the state. With the thick section of pay sand there and the possibility that it is going to cover much more territory than it now does, this field will keep the industry in the anxious seat for several weeks.

Geologists who have studied the Wilcox sand closely in the various localities where it produces, assert that, for the first time since the Seminole area was opened, the true Wilcox has been uncovered.

From the first they referred to the deep pay in Seminole, Searight, Earlsboro, Bowlegs and Little River as the post-Simpson Wilcox—an horizon deposited after the true Wilcox was laid down and hence higher in the stratigraphic column.

The true Wilcox has been drilled at a number of places in these fields, but has generally been barren, producing a negligible amount of oil in a few wells in the Bowlegs field. It has been popularly known as the "second" Wilcox and exists under all the fields, having a thickness of several hundred feet, but is unsaturated with oil.

Now, in St. Louis, in Twp. 7N-5E, Pottawatomie county, the true Wilcox is holding forth in great style. At the end of the week there were 25 Wilcox wells in the producing column, averaging 3300 barrels each. While the main part of the field does not cover much territory yet, being confined to about a half section all told in Secs. 19 and 30-7-5, it must be remembered that lying off to the east of other production three-fourths of a mile is the No. 1 Guinn well of the Mid-Continent Petroleum Corp. which is making 2300 barrels. It is 50 feet lower on top of the Wilcox sand, elevations considered, than the 20,000-barrel well drilled several weeks ago by the Independent Oil & Gas Co.

The good leases in this field will be high in final recovery. For example, the Hembree lease of T. B. Slick, being the east half of the west half of the southeast quarter of 19-7-5—40 acres—has produced to this date a little more than 1,565,000 barrels. There are four wells on the lease, but one has been dead for two weeks, a shot having bridged the hole. Currently, the three wells are making 17,000 barrels daily.

The Independent Oil & Gas Co.'s Youts lease, which is 80 acres in the east half of the southeast quarter of Sec. 19, offsetting Slick's lease to the east, up to Sept. 25 made 1,141,294 barrels, producing 657,065 barrels the 24 days in September. The lease has six producing wells and is making about 27,000 barrels daily at this time.

News that the Sinclair Oil & Gas Co. had drilled a failure in its No. 1 Nadash, NE SW NW of 29-7-5, more than a quarter of a mile southeast of production, caused some prophesying that the field was about ended in that direction. This well should not be taken quite so seriously. Structurally, it was three feet higher than the big well of the Independent Oil & Gas Co. previously referred to. That small variation is not to be construed as extraordinarily significant, however, as these rotary holes sometimes wander o'er hill and dale. Secondly, it will still make a well after it is plugged back from the water. Not so good a well as though it hadn't got the water, but a well of upward of 1000 barrels. It had top of Wilcox at 4223 feet.

The offset well to this to the east is the Gypsy Oil Co.'s and it is running 214 feet lower on the top of the Viola lime than did the Sinclair well. There the variation is great enough to admit of interpretation. But, to

show that the predictions as to the field's ending with the Sinclair well are not to be relied upon implicitly, the Sinclair No. 2 Nadash, four locations south of the one that drilled into water, is the highest well structurally in the field on the top of the Viola lime. And the Independent Oil & Gas Co.'s No. 2 Blandin, in the NW NW SW of 30-7-5, a little better than a mile west of the No. 2 Nadash, is running about as high as is the highest well in the field.

The field is cut off to the north by a row of failures and the west offset to the discovery is a failure. But it hasn't been ended yet in any other direction.

Production is not due for much if any increase until it rains. St. Louis is troubled with water in two ways. A few of the wells are making small amounts, although those who have watched the other Seminole district fields from their inception are not much excited over one and two per cent water, as all the others had water and look at the oil they made anyway.

The scarcity of water for drilling, however, is serious. There hasn't been a good rain for weeks and all the streams in the country are dried up. About 75 drilling wells in St. Louis are shut down and even gasoline plants have ceased to operate. The Sinclair Oil & Gas Co. is the one company that is well fixed for water. When they put in their water system for the field they went to the Canadian River, about 10 miles south, and put down wells in the riverbed. The river is quite low now but the wells are getting plenty of water from the underflow in the thick sand bed of the stream.

The St. Louis pool has definitely displaced the Little River extension as the liveliest spot in the state. A recent check of activities in that district shows 170 drilling operations under way as against 102 in the Little River district. Details of the work being done in the former pool include six locations made, 29 rigs built, nine rigging up preparatory to spudding in, eight wells shut down and 118 drilling.

The Wilcox sand production of the field, which gives the pool its real importance, fell off during the past week in spite of several wells completed. The Barnsdall Oil Co. got its first Wilcox well in the field by completing its No. 1 Stahl for a light well. Located in the NW SW NE of 30-7-5, this producer topped the Wilcox at 4337 feet, and swabbed 707 barrels the first eight hours after drilling the sand to a total depth of 4354. The previous 24 hours the well had swabbed 236 barrels from the Simpson. The well was swabbed low to make the 707 barrels, but no water made its appearance. The Magnolia Petroleum Co. No. 3 Hembree, in the NW SW SE of 19-7-5, has a hole full of oil from the Wilcox from 4155 to 4170. Although the hole is standing full of oil, it refuses to flow. The same company has oil in the Wilcox in its No. 1 T. Fyke, in the SW NW of 20-7-5, in which the sand was topped at 4167. The well is swabbing from a total depth of 4175, production amounting to 280 barrels per day.

The list of Wilcox sand producers in the field are as follows:

Company	Well No.	Prod. Sept. 28	Prod. Sept. 20
Barnsdall	1-Stahl	707 (6 hrs.)	.....
Gypsy-Sinclair,	1-Stahl	4240	5135
Gypsy-Sinclair,	2-Stahl	4712	5827
Phillips,	2-Stahl	6582	7287
Sinclair	1-Nadash	.....	.....
Magnolia	1-Hembree	897 (8 hrs.	2511
Magnolia	2-Hembree	8778 on air)	7731
Magnolia	3-Hembree	87	.....
Magnolia	4-Hembree	5181	1406
Magnolia	1-Youts	72	.....
Magnolia	2-Youts	1572	.....
Magnolia	1-T. Fyke	284	.....
T. B. Slick	1-Hembree	5742	6460
T. B. Slick	2-Hembree	5425	6205
T. B. Slick	3-Hembree	6132	7177
T. B. Slick	4-Hembree	off	off
T. B. Slick	1-Youts	4425	4412
Mid-Continent	1-Guinn	2340	4130
Independent	1-Youts	7125	9100
Independent	2-Youts	4805	6270
Independent	3-Youts	4695	4045
Independent	4-Youts	3635	8115
Independent	5-Youts	5270	5055
Independent	6-Youts	1440	.....
		82,862	90,866

About 50 wells in the Little River area are showing water in various amounts. Along the western edge of the extension, that is, on the section line between sections 14 and 15, twp. 7-6, several failures have been drilled, the latest being the T. B. Slick, Inc., No. 7 Williams, in the SW SE NE of 15-7-6, which had 1500 feet of water from the Wilcox topped at 4352. In section 11-7-6, the connecting link between the north and south divisions of the Little River pool, the Blackwell Oil & Gas Co. No. 1 Baker, in the SW NW SE of the section, has been found to be still in the Simpson, and not in Wilcox, as had been previously reported.

Top of the Simpson is reported as 4370, with the well drilling at 4444, still in the Simpson with 1500 feet of oil in the hole. The southeast edge of the field is having its water troubles, too. The Roxana Petroleum Corp. No. 4 Hotulke, in the NW NE NW of section 23-7-6, had the Wilcox at 4210-17. The first 20 hours the well swabbed but 110 barrels, with a good show of water. There have been several failures put down on the eastern edge of the same section.

A few more locations have been made in Twp. 7-7, in the vicinity of the Mid-Continent Petroleum Corp. No. 1 Smith in the NW NE of 5-7-7. A steel lime measurement on the Wilcox in this well changed the sand record from 4443-4444 as previously reported to 4225-27. This puts the well considerably higher on the structure than the first figure reported, a fact which is supported by the performance of the well itself. After being shut in for ten months the well was opened up Sept. 19 with a production of about 900 barrels daily on the swab. Without being deepened, the well has increased its production to better than 1650 barrels daily, and, what is more important, has started flowing its production.

A wildcat being drilled by T. B. Slick, Inc. in the NW NE of 11-5N-6E, southern Seminole county, topped the Hunton lime during the week. The formation was encountered at a depth of 3505 feet and drilled to 3521 with a show of oil. The test is still in the rotary hole, and 8-inch casing is being cemented at 3471 to test the Hunton. This test is about ten miles west of the Allen pool, in which the Sinclair Oil & Gas Co. found Wilcox production in its No. 2 Amos B, in the SE NE SW of 7-5-8 last week.

Another well in the Allen pool is to be carried on down to the Wilcox. The Sinclair Oil & Gas Co. No. 1 Nakotche, in the NE NW SW of 18-5N-8E, had a hole full of water in the Cromwell sand from 2740 to 2775. The 6-inch casing is being underreamed at present, and the well will be made a Wilcox test. It is ¾ of a mile south and ¼-mile west of the Wilcox discovery well.

Southwestern Coal county, Okla., was the scene of another Wilcox failure. McGraw et al. drilled their No. 1 Patton, in the SW SE NE of 35-1N-8E to the Wilcox at 4770-4785, only to be rewarded with a production of salt water amounting to six bailers per hour.

In Pittsburgh county, five miles south of Eufaula, Pattison and others are getting very deep in their wildcat many miles from other consequential production. The test, No. 1 McDuff, is in the SW NW SE of 32-9N-16E. It had three million feet of gas at 1325-90 feet; two million at 1890-95; bradenheaded three million feet of gas from the Cromwell sand at 4472-4525; had three million feet more at 4613-35. It got the Hunton lime at 5084-5140 feet; Wilcox at 5343-5424 and is drilling at 5449 feet.

In the Texas Panhandle the most important well of the week was Mordyan Oil & Gas Co. No. 1 Davis, in Sec. 8, Blk. 1, in the A. C. H. & B. survey in Gray county. This producer had the granite wash pay at 2833-35, with an initial production better than 2800 barrels. The well is a few miles south and a little east of the town Lefors, and lies between two producing areas.

A test in Kansas, whose initial production amounted to but 20 barrels is of interest because of its distance from other production of importance. It is the Roth and Faurot No. 1 Bradberry, in the SE NW of 21-9S-4E, in Clay county, some forty miles north of the Lost Springs pool, which is the nearest production of consequence. Located on the Abilene arch, the well had the chat from 1757 to 1775 feet.

New Drilling Starts at Santa Fe Springs As Crew Fights to Kill Burning Well

LOS ANGELES, Sept. 29

AT SANTA FE SPRINGS, interest largely centered this week in the digging of a tunnel to tap the casing 50 feet from the surface of Getty's No. 17, the well that blew out and caught fire Sept. 15 and which has been burning since that time.

Late on Sept. 28, the tunnel was within 15 feet of the casing, and it is expected the bore will be completed early next week. A room some 10 to 12 feet square will be excavated around the casing, the casing will be tapped and mud pumped into the hole in an effort to kill the well.

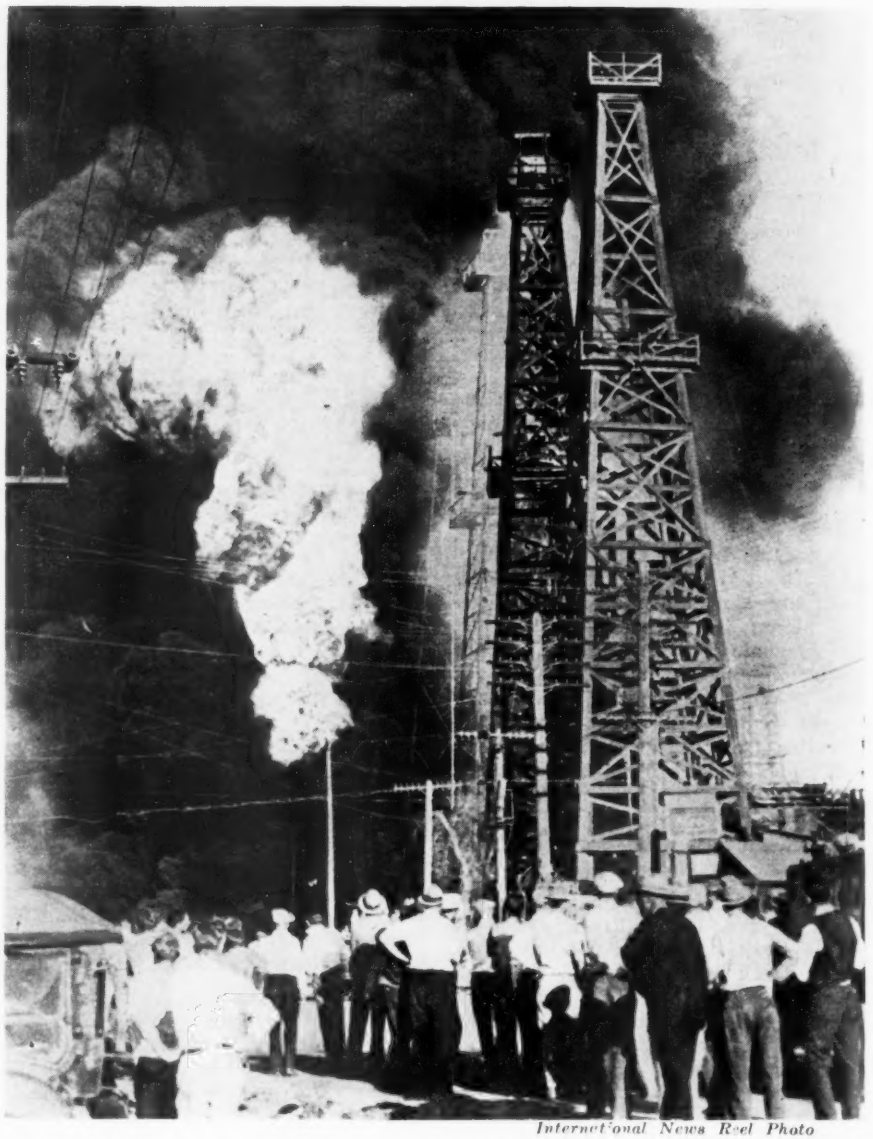
This method of controlling the fire is being watched closely by production executives and engineers, and if the plan underway proves successful, it is felt that a difficult mechanical feat will have been performed.

In spite of the burning well shooting flaming gas and oil 100 to 150 feet into the air in the busiest part of the field, the number of field jobs has increased to slightly better than 200, including locations to actively drilling projects. Two wells have already tapped the Buckbee, or new deep sand, at about 5700 feet. Both holes have cemented casing and Shell Co. is drilling out the cement in Slusher 12 at 5690 feet.

Texas Co.'s Mettern is standing cemented at 5715 feet. Approximately 40 wells are drilling below 4000 feet. A few drilling wells in the vicinity of the burning well are idle, in addition to a greater number of Meyer zone producers. The area surrounding the burning well is roped off and deputy sheriffs are keeping visitors away from the danger zone.

The burning well is thought to have got beyond control after mud circulation had been lost in the Meyer zone, thus leaving an almost open hole while tools were being run out. Many wells have lost circulation while drilling through the Meyer, or upper zone, until the department of petroleum and gas, state mining bureau, felt called upon to issue a special notice to all operators warning them to take all precautions while drilling.

At Long Beach, only seven new wells were placed on production the past week. These wells furnished about 7750 barrels flush production, not enough to prevent a decline. One recompletion only made 165 barrels while the six new wells made an average of about 1250 barrels per well. At the close of the week there were 182 drilling operations and of this number 55 were drilling below 6000 feet.



International News Reel Photo

A fire fighting crew is tunneling 50 feet underground to reach the casing of the Getty No. 17 at Santa Fe Springs, Cal., which has been burning since Sept. 17. They will tap the casing and pump mud into the hole in an effort to kill the well

The wells are being completed close to 7000 feet—some a few feet above and many slightly below this depth. It is now thought that the Long Beach production will play between 175,000 and 200,000 barrels daily between now and end of the year.

At Potero, Associated Oil Co.'s Cypress 3 had to be recemented the second time, with 11-inch at 3255 feet, while bottom of hole is at 3376 feet. Same company's Pacific Southwest apparently has secured a successful water shutoff and will drill out for a production test early in the week. Bottom of hole is at 4777 feet with 9-inch at 4420 feet.

Shell Co. has made 5 new locations at Mount Posco and Petroleum Securities plan to drill at least three new wells in same field.

Two 80,000-barrel tanks are being erected in the new Elwood field in Santa Barbara county, by Rio Grande Oil Co. and Barnsdall Oil Co., and Rio Grande and Union Oil Co. are seeking permission to construct marine pipe lines into Santa Barbara channel offshore from the Elwood field.

The discovery well in this field was completed at 3208 feet for about 2500 barrels of 37.5 gravity oil. The leases were blocked by the Rio Grande

and the drilling was done by Barnsdall on a 50-50 basis. The Rio Grande-Barnsdall Elwood Acres No. 1, almost a mile due east of the discovery well, late in the week was drilling at about 3600 feet and it is expected that the sand will be picked up within the next 100 to 200 feet as the structure dips sharply to the east.

Same interests are preparing to spud in Luton Bell No. 2 offsetting the lone producer and are also moving in machinery for Doty No. 1.

Bankline Oil Co. spudded a well nearly a mile northeast from the discovery well while Dunlap & Knapp are spudding a well on a drilling site about two locations away from Elwood Acres No. 1. E. L. Doheny and Son have leased 45 acres almost two miles east of the discovery well and probably will move in derrick timbers next week.

Several of the major companies have secured acreage in the general Elwood area and it is possible that within the next two months 10 to 15 wells will be drilling in this new field. The gravity of the oil makes the proposition attractive and there is a good demand for this high gasoline content crude.

The A. L. Marston well, seven-eighths of a mile southeast of Pacific Eastern's No. 1 producer in the new Fruitvale field, was placed on production this week with bottom of hole at 3802 feet. The well is flowing close to 200 barrels a day of 22.1 gravity oil in addition to about 500,000 cubic feet of gas. The oil zone extends from 3670 feet to 3802 feet with some shale mixed in.

It is flowing through 2½-inch tubing run to 2600 feet. The well started swabbing Sept. 26. A swab rubber was lost in the hole but in spite of this it started flowing Wednesday with a casing pressure of 400 pounds and a tubing pressure of 50 pounds. Thursday morning the flow included 1.4 per cent fine sand and 1.3 per cent mud with no water. That afternoon the flow was turned from the sump into a flow tank.

* * *

LOS ANGELES, Sept. 29.—A second meeting of those interested in the Santa Fe Springs where a deep sand is about to be developed has been called for Oct. 4, at the Chamber of Commerce building, Los Angeles. The meeting was called by the Chamber of Mines & Oil and at this meeting the matter of co-operative action to conserve the expected large gas production will be discussed and a committee will be named to represent the operators.

This committee will make a study of the field, step by step, as wells penetrate the deep zone, and at the proper time will be charged with submitting a well thought out plan for the attention of the operators.

Fred G. Stevenot, chairman of the Governor's Gas Conservation Committee, urged oil companies to send representatives to the meeting Oct. 4.

Michigan Practicing Oil Conservation

CLEVELAND, Sept. 28

MICHIGAN, the latest state to come into the column of those producing oil, may be among the first to regulate its production in the interests of conservation.

An operators' committee in the Muskegon field, in the southern part of the state, is working with the state geologist to hold back the drilling of gas wells too close together in the newer sand, which is found around 2000 feet.

Michigan has broad legislation referring to conservation and waste of any of its natural resources. It also has a law passed in 1927 requiring permits to be secured from the state before oil or gas wells are drilled, and stating that the drilling of all wells must be carried on in such a manner as not to damage other properties.

The state geologist is in charge of the enforcement of both laws. He is working with the oil operators' committee to see that regard is given to well spacing and proper development methods by the inexperienced and promotion type of companies which are operating in this field, the district being one where property is held in small parcels, for the most part.

Some 35 companies have been organized to drill within the past few weeks, and 60 strings of tools are running. Some of the gas wells have an open flow of as high as 15,000,000 cubic feet a day, although it is not believed likely they would do anything like this amount for any length of time, or if other wells in the neighborhood were flowing. There is very little market for the gas at present.

The well which opened the new sand is about two and a half miles southwest of the field which was opened last winter, for a small amount of oil production at 1600 feet. About 800 barrels a day of oil are being produced now. The lower formation, the Dundee, is also producing some oil.

Harry H. Hill, chief of the petroleum division, U. S. Bureau of Mines, recently visited the Muskegon field to advise with the operators' committee and the state geologist on operating methods. He also conferred with Governor Green on the situation.

R. R. Brandenthaler, of the Bartlesville station of the Bureau of Mines, has also been in the Muskegon field advising on operating methods, such as mudding and cementing. He called attention to the danger of operators using low pressure fittings with the high pressure gas encountered in the field, which runs as high as 900 pounds. Mr. Brandenthaler has returned to Bartlesville and W. B. Berwald, of the bureau staff, is now in the Muskegon field serving operators in an advisory capacity.

Empire Starts Second Lea County Test

HOUSTON, Sept. 27.—Empire Gas & Fuel Co. has made location for its No. 2 test in Lea county, New Mexico, 2310 feet from the south and 330 feet from the east lines of 18-21S-35E, near its recently completed No. 1 state well.

The No. 1 well, in 8-21S-35E, tested 125 barrels of oil and 125 barrels of water, Sept. 12, according to reports from the field. Its depth is about 3817 feet.

Midwest Refining Co.'s No. 1 state, in 9-19S-38E, has been deepened several times to present total depth of 4302 feet. After testing at the rate of 534 barrels daily in 5 hours it was shut in for additional storage. There is now a total of about 13,000 barrels of oil in lease tanks.

Northwest of the Empire and Midwest wells, in the direction of the old Maljamar area, The Texas Production Co. got a small oil show in its No. 1 Compton test in 9-16S-31E, at 4350-4353 feet. The hole filled with sulfur water from 4355-4365 feet. The test probably will be plugged at total depth of 4385 feet.

Marland Production Co.'s No. 1 Lynn, in 26-23S-36E, which found the lime marker formation high for the region, is putting on control head while waiting for cement to set at 2868 feet.

Smith Brothers Awarded Pipeline Contract

HOUSTON, Sept. 28. — Smith Brothers of Dallas have been awarded contract to build the 590-mile sulfur crude transportation system recently announced by The Texas Pipeline Co. from Monahans, west Texas, to its Gulf Coastal terminal at Port Arthur. The contract calls for the beginning of construction work by Oct. 1 and its completion by March 1.

The system includes 470 miles of 12-inch line and 120 miles of 10-inch. Pumping station construction is not included in the contract, the pipe line company handling this work itself. As equipped in the beginning the system will have 35,000 barrels daily capacity. It may be increased, however, by installation of more pump stations later.

Osage Sale Nets Indians Nearly a Million

PAWHUSKA, Sept. 27

DESPITE a general disinclination to pay fancy prices for leases on Osage lands, the sale held here Sept. 27 was the only auction since these sales were inaugurated in 1912 at which bids were made on every tract put on the block.

This sale, the 31st in number, brought the Osage tribe $986,200 for the 19,922.15 acres offered.

The top price of the day was paid by the Lewis Production Co., of Tulsa, for Tract No. 109, which covers the SE of 15-26N-6E. It was knocked down by Auctioneer Walters for $188,000. It is in the "shoestring" producing zone east of Burbank.

Although many of the major operators of the Mid-Continent were represented at the sale, the bidding was far from as spirited as has usually been the case.

The usual drilling requirements (a well drilled the first year) were dropped, and straight 5-year leases, were given, kept in force by the payment of a dollar per acre per year rental.

This placed the lands on the same basis as leaseholds taken elsewhere throughout the state, with the exception of the ⅛ royalty paid the Osage tribe, instead of the ⅛ accorded the lessor under the straight commercial leases. A clause in the lease, however, provides that the secretary of the interior may order drilling on any undrilled tract at any time.

The three tracts which occasioned the greatest loosening of the purse strings were along the southeast flank of the Burbank pool, all in Twp. 26N-6E. After tract 109, bought by the Lewis Production Co., the second most costly tract was the SW of Sec. 14, for which the same company parted with $177,000. The latter is the east offset to the former. A. G. Oliphant nodded his head to the extent of $145,000 for the NW of Sec. 14, a diagonal offset northeast of the high priced tract bid in by the Lewis interests.

Bidding was general on all these tracts. R. M. Young, president of the Carter Oil Co., did the head wagging for that company disguised in a pair of glasses. The Prairie Oil & Gas Co., represented by Dana H. Kelsey and Fred Cook, took a part in the proceedings, although they were not inclined toward any heavy spending. The Prairie did pick up several pieces of the less expensive variety, however, paying $50,000 for the SE of Sec. 10-26N-6E, and lesser amounts for several other tracts during the day.

Charles B. Peters, as usual, joined forces with the Producers & Refiners Corp., a Prairie subsidiary, and took down a number of offerings. Skelly Oil Co. threw its hat in the ring for a while, but refused to go high enough to capture any of the pieces which it fancied.

The Marland Production Co., through Charles C. Brown general manager, and J. R. McGinley, was an active bidder throughout the sale, stopping just a few thousand dollars short of the necessary amounts on some of the highest priced leases. The highest price paid by this company was $20,500 for the NE of 21-24N-7E, a tract which offsets to the northwest the lease on which the Kay County Gas Co. discovered oil prior to the last sale in March. Under the terms of the sale last spring, production on this lease was limited to 100 barrels per day per well, and no further wells have been drilled. While the restriction has been removed the well is still shut in to normal production.

The Transcontinental Oil Co., new comers to the Osage, purchased several tracts.

Humble Buys Tank Farm Site

HOUSTON, Oct. 1.—Humble Oil & Refining Co. has acquired surface rights to 200 acres of the Todd land, near the Boggy Creek salt dome, in eastern Anderson county, for a tank farm. Wells on the Boggy Creek dome, which straddles the Anderson-Cherokee county boundary in east Texas, are making pinched production of about 1200 barrels daily. The dome is jointly controlled by the Humble and the Rio Bravo Oil Co., Southern Pacific subsidiary. Present production is being moved out in tank car shipments from Fry's Gap, over the Texas & New Orleans railroad.

HOUSTON, Oct. 1.—The Rio Pecos Oil Co., recently formed at San Angelo to operate in west Texas, is incorporated for $75,000. George E. Blanton is president and secretary; P. H. Williams, vice president; W. B. Hunter, treasurer; and Norman McNutt, assistant secretary. Directors also include J. P. Kittrell, Big Lake; C. R. Hallmark, L. B. Horton, S. H. Humphrey, and E. C. Carnes, San Angelo.

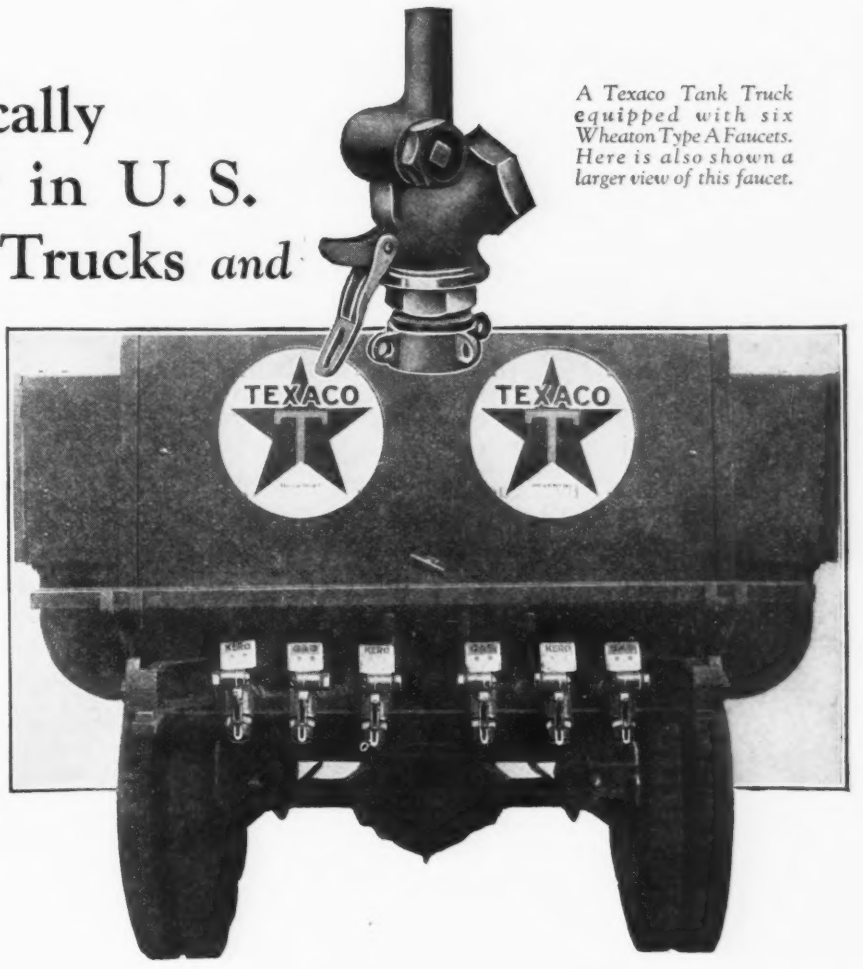
Seminole District Production by Companies and Leases, September 26 and September 19, 1928

LITTLE RIVER

Company	Farm	S.T.R.	Sept. 26th Wells	Sept. 26th Prod.	Sept. 19th Wells	Sept. 19th Prod.
Amerada	Nitey	2- 7-6	3	1,180	3	1,180
Amerada-Wilcox	Fore	35- 8-6	2	275	2	305
Total Amerada			5	1,455	5	1,485
Barnsdall	Cotcha	23- 7-6	1	1,570	1	640
Barnsdall	Hotulke	22- 7-6	2	734	2	795
Barnsdall	Walker	4- 7-6	1	370	1	514
Total Barnsdall			4	2,674	4	1,949
Blackwell	Baker	11- 7-6	3	1,935	3	2,265
Blackwell	Nitey	35- 8-6	6	1,768	6	1,580
Blackwell	Talley	14- 7-6	2	870	2	875
Total Blackwell			11	4,573	11	4,720
Carter	Cotcha-M	23- 7-6	1	117	1	175
Carter	Cudjo	23- 7-6	1	105	1	120
Carter	Fish	36- 8-6	6	620	6	620
Carter	Harjo-C	11- 7-6	1	5,767	1	5,620
Carter	Harjo-M	13- 7-6	2	1,482	2	1,213
Carter	Jackson	11- 7-6	3	2,195	3	2,450
Carter	Larney	24- 7-6	2	1,903	2	2,155
Carter	Lena	10- 7-6	1	1,711	1	1,867
Carter	Moore	11- 7-6	1	1,025	1	1,155
Carter	Tewee	14- 7-6	4	4,276	4	4,320
Carter	Thomas	11- 7-6	2	375	2	1,060
Carter	Wilson	12- 7-6	1	1,060	1	1,190
Total Carter			25	20,635	25	21,945
Champlin	Tewee	14- 7-6	2	2,740	2	2,426
Continental	Cosar L	36- 8-6	7	1,715	7	1,605
Cont.	Cosar M	25- 8-6	1	422	1	320
Cont. et al	Milsey	11- 8-8	1	1,645	1	1,320
Total Continental			9	3,802	9	3,245
Empire	Coker	13- 7-6	1	495	1	555
Gypsy	Brown C	33- 8-6	2	997	2	695
Gypsy	Brown M	33- 8-6	1	1,187	2	1,582
Gypsy	Campbell	33- 7-6	2	77	2	82
Gypsy	Conard	22- 7-6	2	1,357	2	1,019
Gypsy	Cosar M	25- 8-6	1	0	1	0
Gypsy	Cosar W	35- 8-6	2	477	2	370
Gypsy	Cotcha	23- 7-6	4	2,823	3	1,527
Gypsy	Denmark	11- 7-6	4	3,097	3	4,312
Gypsy	Hulhoke	14- 7-6	10	6,320	8	4,985
Gypsy	Mungee	1- 7-6	1	0	1	22
Gypsy	Pottie	35- 8-6	4	775	4	800
Gypsy	Renton	11- 7-6	3	1,067	3	1,160
Total Gypsy			36	18,177	32	16,554
Independent	Davis R	13- 7-6	2	880	2	955
Indep.	Tewee	14- 7-6	4	3,375	4	1,967
Indep. et al	Harris	23- 7-6	5	2,131	5	1,747
Indep.-W. Eagle	Davis	3- 7-6	3	1,200	3	1,226
Indep.	Williams	15- 7-6	1	1,495	1	1,415
Total Independent			15	9,081	15	7,311
I. T. I. O.	Campbell	1- 7-6	1	205	1	232
I. T. I. O.	Dungan	35- 8-6	3	1,195	3	1,222
I. T. I. O.	House MA	1- 7-6	1	57	1	31
I. T. I. O.	House WE	1- 7-6	1	49	1	32
I. T. I. O.	House B	2- 7-6	4	1,039	4	1,184
I. T. I. O.	Hull	25- 8-6	3	1,082	3	1,307
I. T. I. O.	Jackson	1- 7-6	3	926	3	1,006
I. T. I. O.	McCulla	1- 7-6	3	576	3	619
I. T. I. O.	Nitey	1- 7-6	6	307	6	409
I. T. I. O.	Phoebe-A	36- 8-6	3	317	3	339
I. T. I. O.	Phoebe-B	36- 8-6	4	160	4	172

(Continued on Page 40)

On practically Every Highway in U. S. ~Texaco Tank Trucks *and* WHEATON FAUCETS



A Texaco Tank Truck equipped with six Wheaton Type A Faucets. Here is also shown a larger view of this faucet.

THROUGHOUT the country, from ocean to ocean and from the Lakes to the Rio Grande, The Texas Company sends its tank trucks, delivering Texaco Products. Wherever you drive the highways you see those big trucks with the familiar red stars, telling the world who they are. And, if you will look at the rear, you will see a row of Wheaton Faucets—inconspicuous but important.

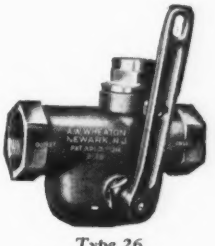
In 1912 The Texas Company ordered one Wheaton Faucet. Then they ordered more—always one at a time. Perhaps 25 went out to as many different points. Tests were made, and managers reported. Wheaton Faucets were elected! And from that time till this, Wheaton has been the standard tank truck faucet equipment throughout that great nation-wide organization.

Sufficient praise indeed!

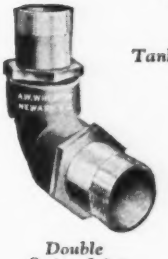
Other Wheaton Products used by The Texas Company include Loading Valves, Swing Joints and Anti-Freeze Valves.

Anti-Freeze Valve

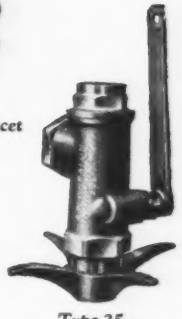
Type 24 Tank Truck Faucet



Type 26 Loading Valve



Double Swing Joint



Type 25 Loading Valve

A. W. WHEATON BRASS WORKS, NEWARK, N. J.

Empire Brass Mfg. Co., Ltd. London, Ontario, Canadian Manufacturers and Distributors.

Wheaton

FAUCETS · VALVES · JOINTS · COUPLINGS · FILLERS · NOZZLES · FITTINGS

Seminole District Production by Companies and Leases, September 26 and September 19, 1928

(Continued from Page 38)

Company	Farm	S.T.R.	Sept. 25th Wells	Sept. 25th Prod.	Sept. 19th Wells	Sept. 19th Prod.
I. T. I. O.	Reed	1- 7-6	1	27	1	31
I. T. I. O.	Soketheche	1- 7-6	3	404	3	635
Total I. T. I. O.			36	6,344	36	7,213
Magnolia	Cruse	2- 7-6	4	1,050	4	966
Magnolia	Denby	11- 7-6	2	1,240	2	1,288
Magnolia	Dixon	31- 8-7	1	3	1	2
Magnolia	Harjo A	14- 7-6	2	1,165	2	1,465
Magnolia	Harjo B	14- 7-6	2	216	0	0
Magnolia	Pottie	35- 8-6	4	575	4	584
Magnolia	Reed	22- 7-6	2	1,248	2	1,272
Total Magnolia			17	5,497	15	5,577
Mid-Continent	Brunner	11- 7-6	4	3,420	4	3,935
Mid-Continent	Eleck	23- 7-6	1	695	1	35
Mid-Continent	Smith	5- 7-7	1	1,455	1	65
Mid-Continent	Wadsworth	36- 8-6	7	480	7	475
Total Mid-Continent			13	6,050	13	4,510
W. B. Pine	Hoyecha	26- 8-6	5	2,464	4	1,577
Pine-Phillips	Pottie	35- 8-6	2	307	2	427
Total Pine			7	2,771	6	2,004
Prairie	Chilcoat	25- 8-6	3	850	3	905
Prairie	Dungan	36- 8-6	1	30	1	0
Prairie	Gibson	14- 7-6	5	1,670	5	4,130
Prairie	Harris	14- 8-6	3	2,260	3	1,500
Prairie	House	2- 7-6	4	565	4	655
Prairie	Moppin	24- 7-6	1	755	1	890
Prairie	Talley	14- 7-6	2	1,685	2	1,845
Prairie-Amer	Sunny	14- 7-6	7	9,370	6	8,113
Total Prairie			26	17,185	25	18,038
Pure	Cotcha	14- 7-6	5	3,609	5	3,920
Pure	Harjo	11- 7-6	3	1,423	3	1,847
Total Pure			8	5,032	8	5,767
Reiter-Foster	Bunyard	14- 7-6	4	4,000	3	4,005
Roxana	Caesar	11- 7-6	1	87	1	117
Roxana	Hotulke	23- 7-6	4	1,862	3	1,769
Roxana	Johnson	13- 7-6	3	2,635	3	3,127
Total Roxana			8	4,584	7	3,127
Shaffer	Narcome	36- 8-6	2	235	2	222
Sinclair	Cosar	36- 8-6	3	1,215	3	1,400
Sinclair	Haney	12- 7-6	1	123	1	117
Sinclair	Tewee	14- 7-6	2	2,275	2	2,490
Total Sinclair			6	3,613	6	4,008
Skelly	Carl	14- 7-6	2	2,581	2	579
Slick	Reed	13- 7-6	1	375	1	1,465
Slick	Williams	15- 7-6	2	1,050	2	1,042
Total Slick			5	4,006	3	3,507
Snowden et al	Tiger	13- 7-6	2	70	2	1,100
Superior	Soketheche	1- 7-6	1	10	1	10
Texas	Brooks	25- 8-6	1	665	0	0
Texas	Coker	1- 7-6	3	730	3	735
Texas	Janey	11- 7-6	2	1,750	2	1,530
Texas-Indep	Hotulke	23- 7-6	2	1,485	2	2,075
Total Texas			8	4,630	7	4,340
Tidal	House	1- 7-6	3	475	3	477
Tidal	Johnson	1- 7-6	1	30	1	28
Total Tidal			4	505	4	404
Twin State	Lowe	25- 8-6	1	150	1	150
TOTAL LITTLE RIVER			256	128,295	246	125,839

EARLSBORO

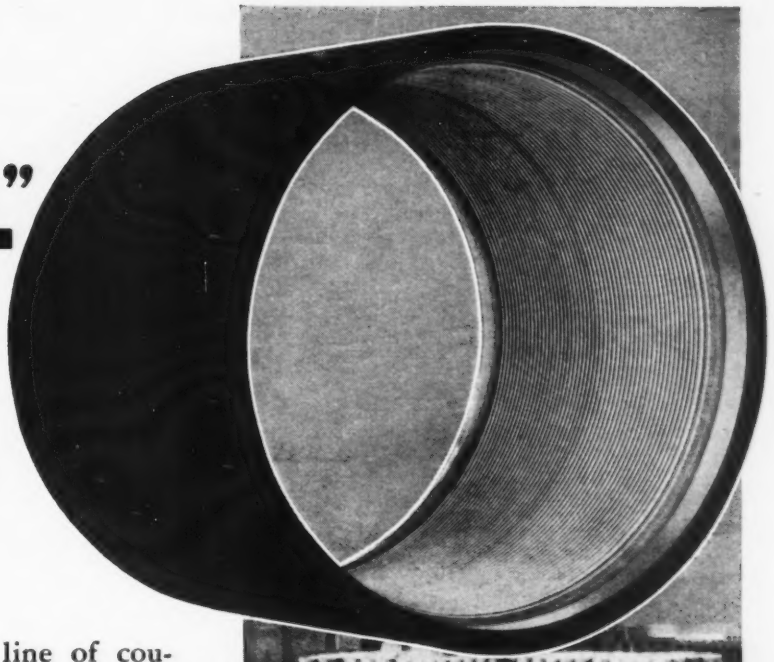
Amerada	Anderson	15- 8-5	2	591	2	584
Amerada	Cowden	4- 9-5	7	1,149	7	1,140
Amerada	Rogers	3- 9-5	2	137	2	20
Total Amerada			11	1,777	11	1,744
Atlantic et al	Foreman	18- 9-5	1	140	1	140
Barnsdall	Brown	10- 9-5	4	1,941	4	1,662
Barnsdall	F. Bruner	2- 9-5	3	503	3	652
Barnsdall	N. Bruner	10- 9-5	3	1,041	3	1,074
Barnsdall	Cudjo	14- 9-5	1	23	1	23
Barnsdall	D. Davis	11- 9-5	3	132	3	166
Barnsdall	J. Davis	11- 9-5	4	1,146	4	729
Barnsdall	M. Davis	11- 9-5	2	60	2	53
Barnsdall	Gibson	9- 9-5	8	1,929	8	2,002
Barnsdall	Hern	15- 9-5	1	1	1	1
Barnsdall	Ingram	1- 9-5	8	1,141	8	880
Barnsdall	Pack	10- 9-5	4	179	4	157
Barnsdall	Peter	10- 9-5	4	90	4	90
Barnsdall	Sango	1- 9-5	4	2,399	4	2,283
Barnsdall	Sebolka	15- 9-5	1	307	1	182
Barnsdall	H. Sullivan	11- 9-5	1	0	1	8
Barnsdall	Sull-Harjo	10- 9-5	2	33	2	29
Barnsdall	Watsutke	12- 9-5	4	1,066	4	869
Total Barnsdall			57	11,991	57	10,860

Company	Farm	S.T.R.	Sept. 26th Wells	Sept. 26th Prod.	Sept. 19th Wells	Sept. 19th Prod.
Burk-Greis	Wisner	6- 9-6	1	1,420	1	1,175
Carter	Davis	13- 9-5	2	200	2	210
Carter	James	6- 9-6	3	5,765	3	6,045
Carter	Sango	1- 9-5	3	50	3	55
Total Carter			8	6,015	8	6,310
Continental	Kays	2- 9-5	2	22	2	45
Continental	Spencer	12- 9-5	4	945	4	1,290
Total Continental			6	967	6	1,335
Empire	Barker	12- 9-5	1	75	1	72
Empire	Edmundson	3- 9-5	3	128	3	143
Total Empire			4	203	4	215
Gypsy	Bruner	10- 9-5	4	4,095	4	2,672
Gypsy	B. Carter	11- 9-5	8	3,165	8	2,815
Gypsy	Earl	16- 9-5	1	10	1	10
Gypsy	Hunick	6- 9-6	1	1,925	1	1,992
Gypsy	Noble	12- 9-5	4	2,375	4	1,602
Gypsy	Peter	10- 9-5	3	305	3	320
Gypsy	Sango	1- 9-5	11	5,647	11	7,267
Gypsy	State	16- 9-5	4	1,325	4	1,468
Total Gypsy			36	18,847	36	18,155
Independent	Bruner	10- 9-5	3	50	3	410
Independent	Sullivan	10- 9-5	1	22	1	25
Independent	Knapp	8- 9-5	3	1,331	3	1,700
Indep.-Margay	Gaines	11- 9-5	3	700	3	710
Total Independent			10	2,103	10	2,845
Magnolia	Bryant	9- 9-5	6	511	6	500
Magnolia	Cowden	4- 9-5	4	30	4	40
Magnolia	Dixon	12- 9-5	1	25	1	17
Magnolia	Edmundson	3- 9-5	3	15	3	30
Magnolia	Holmsley	11- 9-5	7	723	7	934
Magnolia	Hyde	13- 9-5	1	1,600	1	1,333
Magnolia	Ingram	10- 9-5	1	15	1	28
Magnolia	Lena	10- 9-5	3	48	3	55
Magnolia	Seay	12- 9-5	9	2,450	9	2,676
Magnolia	Simpson	10- 9-5	4	572	4	632
Magnolia	Sparks	11- 9-5	7	819	7	697
Magnolia	Sullivan	12- 9-5	3	80	3	79
Total Magnolia			49	6,888	49	7,019
Mid-Cont	McCumber	9- 9-5	7	90	7	90
Mid-Kans	Anderson	14- 9-5	3	80	3	70
Phillips	Dunnaway	14- 9-5	1	30	1	30
Prairie	Baker	24- 9-5	1	50	1	50
Prairie	Davis	13- 9-5	4	2,870	4	2,830
Prairie	C. Graham	3- 9-5	2	20	2	15
Prairie	O. Graham	10- 9-5	4	1,495	4	1,220
Prairie	Stidham	11- 9-5	12	1,895	12	2,045
Total Prairie			23	6,330	23	6,160
Roxana	Bayliss	17- 9-5	1	12	1	12
Roxana	Hearn	13- 9-5	1	102	0	0
Roxana	Spencer	12- 9-5	2	1,297	2	102
Total Roxana			4	1,411	3	114
Shaffer	Clark	1- 9-5	3	410	3	420
Shaffer	McCoy	36-10-5	1	1,220	1	1,230
Total Shaffer			4	1,630	4	1,650
Sinclair	Foreman	18- 9-5	1	14	1	14
Sinclair	Hollins	12- 9-5	1	35	1	35
Sinclair	Sango	2- 9-5	4	3,010	4	3,010
Total Sinclair			6	3,059	6	3,059
Skelly	Mays	1- 9-5	1	3,882	2	4,224
Skelly	Shepard	6- 9-6	1	1,722	1	1,916
Skelly	Sherry	6- 9-6	2	2,145	2	2,902
Skelly	Spencer	12- 9-5	1	539	1	518
Total Skelly			5	8,288	6	9,560
Superior	Ingram	1- 9-5	2	1,061	2	1,085
Superior	Walker	2- 9-5	2	2,814	2	3,038
Total Superior			4	3,975	4	4,123
Texas	Anderson	2- 9-5	8	390	8	465
Texas	Brown	10- 9-5	8	287	8	345
Texas	Rogers	5- 9-5	4	2,345	4	2,300
Texas	Wilmott	10- 9-5	7	655	7	635
Total Texas			27	3,677	27	2,745
Tidal	Walker	35-10-5	1	1,845	1	1,855
Tidal	Watkins	9- 9-5	7	2,540	7	2,585
Total Tidal			8	4,385	8	4,445
Twin State	Barker	12- 9-5	3	53	2	53
Twin State	Hern	2- 9-5	4	275	4	275
Total Twin State			7	328	6	328

SUMMARY

TOTAL EARLSBORO	**283**	**83,624**	**283**	**85,091**
TOTAL BOWLEGS	**316**	**47,470**	**316**	**48,268**
TOTAL SEMINOLE	**290**	**43,296**	**290**	**44,238**
TOTAL SEARIGHT	**69**	**12,061**	**69**	**11,571**
TOTAL LITTLE RIVER	**256**	**128,295**	**246**	**125,839**
GRAND TOTAL SEMINOLE AREA	**1,214**	**314,756**	**1,204**	**315,007**
Avg. per well		**259**		**262**

"NATIONAL" *seamless steel couplings*



The "NATIONAL" line of couplings is designed to care for all your coupling requirements whatever size or type you may need.

First, you are sure of uniformity in material and finished dimensions. Second, you are sure of one and the same high quality in performance on the job. Third, you are sure of a prompt and continuous supply from one source no matter how extensive or varied your requirements.

Every "NATIONAL" Coupling is made under the same ideal conditions—one organization controlling every operation from raw materials to finishing room. Special patented equipment is used for taper tapping; highly perfected threading practice insures ideal threads; improved electro-galvanizing methods prevent galling; a special high grade steel resists deformation and abrasive action; critical inspection after each operation insures a high degree of accuracy in all work performed.

"NATIONAL" Couplings conform in every way to the high standard performance of all "NATIONAL" Oil Country Tubular Products. When reconditioning your "NATIONAL" Pipe in the field, be sure to retain the same high standard of the original equipment by using "NATIONAL" Couplings.

Your local Supply House will take care of your requirements.

NATIONAL TUBE COMPANY
PITTSBURGH, PA.

Completions in Texas, Week Ended September 29, 1928

NORTH EAST CENTRAL

Brown County

Company	Well Farm	Survey Sec. & Blk.	Depth	Init. Prod.
Anna Belle	8-Hickman	Benson Blk-783	1230-1250	175
Cranfill et al	12-Eubanks	Mitchell Blk-141	1242-1250	40
Humble	6-Kilgore	Delgando Sec-3 Blk-789	1108-1132	2
Kone Prod	15-Hickman	Benson Blk-783	1233-1249	100
Lloyd	5-Collier	Smith Blk-139	412-424	15
Amerada	1-Wise	.....	T.D. 930	Dry
Baker-Hodges	1-Eubanks	Mitchell Blk-141	T.D. 1255	Dry
Candle-Flint	1-Copeland	HT&B Sec-47	T.D. 2460	Dry
Forest	1-Graham	Brown Blk-137	T.D. 1885	Dry
Hammond et al	4-Curry	Kenney Blk-624	T.D. 1099	Dry
Hart	1-Casey	H&TC Blk-35	T.D. 1231	Dry
Mid-West	3-George	Cross	T.D. 1375	Dry

Callahan County

Shaw	1-Powell	BBB&C Sec-51	T.D. 1725	Dry
Jackson	1-Long	CCSL Sec-86	T.D. 553	Dry
Burnham	1-Alexander	ET Sec-11	T.D. 1527	Dry
Calloway et al	1-Klutts	CCSL Sec-44	T.D. 453	20

Coleman County

Henshaw	1-Harris	GH&H Sec-25 Blk-1	2611-2622	45
Continental et al	7-Overall	Overall Blk-66	T.D. 2633	Dry
Eastland	2-Morris	Webber Sec-14 Blk-722	T.D. 2660	Dry
Gwinnup et al	1-Morris	Anderson Blk-262	T.D. 2015	Dry
Kingwood	1-Smith	GH&H Sec-7 Blk-1	T.D. 2302	Dry
Magnolia	20-Morris	..... Blk-728	T.D. 2500	Dry
Midsun	1-Overall	GH&H Sec-10 Blk-1	T.D. 2375	Dry

Comanche County

Bighorn	1-Perry	H&TC Sec-50 Blk-2	T.D. 100	Dry
Texas Fidelity	1-Anglin	Branthom	T.D. 3006	Dry

Eastland County

Chestnut-Smith	1-Rankin	H&TC Sec-38 Blk-2	T.D. 1575	Dry
Root	1-Hart	H&TC Sec-62 Blk-4	3432-3436	190
Lewis et al	1-Lyerla	H&TC Sec-27 Blk-2	1271-1296	15

Haskell County

Moody	1-Reynolds	.....	T.D. 1703	Dry

Jones County

Wheeler et al	1-Sales	T&P Sec-3 Blk-20	T.D. 2413	Dry
Stone et al	1-Bennett	OAL Sec-42	T.D. 810	Dry
Marston	1-Horsell	T&P Sec-20 Blk-19	T.D. 2545	Dry

Jack County

Chandler et al	3-Ellis	Williams Abst-877 Blk-4	475-500	8
Buttrum	2-Cullers	.....	2088-2090	5
Buttrum	2-Cullers	.....	2082-2087	25

Mitchell County

Boehen Drlg	1-Hyman	W&NW Sec-90 Blk-29	T.D. 505	Dry

Palo Pinto County

Orbet Drlg	1-Morgan	T&P Sec-76 Blk-1	T.D. 1200	Dry
McGinley et al	1-Hurkston	T&P Sec-74 Blk-3	T.D. 575	Dry

Shackleford County

Gilman et al	1-Davis	T&P Sec-14 Blk-12	T.D. 1509	Dry
Evans et al	2-King	T&P Sec-1 Blk-14	T.D. 1703	Dry
Atlantic et al	1-Reynolds	T&P Sec-25 Blk-11	T.D. 1286	Dry
Hughes	1-Bradford	BWL Sec-3	T.D. 658	Dry
Proffet et al	1-Titus	Williams	T.D. 832	Dry
Evans-Kirk	1-King	T&P Sec-1 Blk-14	1635-1642	52
Roeser-Pendleton	30c60-Cook	ET Sec-60 Blk-14	1178-1202	200
Roeser-Pendleton	32c60-Cook	ET Sec-60 Blk-14	1174-1177	45
Roeser-Pendleton	34c60-Cook	ET Sec-60 Blk-14	1185-1188	40
Sentinel Prod	1-Anderson	LAL Sec-65 Blk-14	736-745	15

Stephens County

Edson	2-Smith	T&P Sec-39 Blk-6	1940-2240	1M
Texas-La	1-1st Nat'l. Bk. of Cisco	SP Sec-445	1700-1704	6M
Bratty et al	1-Leahetton	T&P Sec-84 Blk-6	T.D. 4158	Dry
Hagaman	1-Hagaman	Chambliss Sec-2 Blk-6	T.D. 3654	Dry
Lyas et al	1-Andrews	T&P Sec-39 Blk-7	T.D. 502	Dry

Throckmorton County

Reiter-Foster	5-Graham	TE&L Sec-985 Blk-7	T.D. 1888	Dry

NORTH TEXAS

Archer County

Texas	3-Hayter	TE&L Sec-2409 Blk-7	1417-1428	127
American	15-Tuberville	Carson Sec-2409 Blk-146	1475-1493	7
Reed et al	1-Ikert	Holeman Sec-2409 Blk-17	T.D. 1255	Dry
Humble	1-Logan	Taylor Sec-2409 Blk-24	T.D. 1250	Dry
American	1-Ward	Tomlinson Sec-2409 Blk-24	T.D. 1128	Dry

Wichita County

Clark	3-Kemp et al.	KWVFL Sec-26 Blk-20	T.D. 500	Dry
Hines-Panhandle	1-Waggoner	GC&SF Abst-772 Blk-2	1390-1394	50
Comac Drlg. et al.	1-Putman	Netherly Abst-240 Blk-2	1783-1788	9

Wilbarger County

Phillips	4-Waggoner	H&TC Sec-30 Blk-4	2234-2336	18
Waggoner	8-Waggoner	H&TC Sec-30 Blk-4	2282-2308	287
Waggoner	9-Waggoner	H&TC Sec-24 Blk-4	2407-2427	500
Baker et al	3-Waggoner	Purnell	1875-1892	355
Bars-Dillard	3-Waggoner	H&TC Sec-5 Blk-5	1853-1873	94
Bars-Dillard	4-Waggoner	H&TC Sec-5 Blk-5	1847-1865	50
Consolidated	11-Waggoner	H&TC Sec-5 Blk-5	1838-1885	443
Fain-McGaha	9-Waggoner	H&TC Sec-24 Blk-4	2409-2422	1400
Lawson	13-Waggoner	H&TC Sec-30 Blk-4	1838-1846	60
Consolidated	2-Waggoner	H&TC Sec-5 Blk-5	T.D. 1909	Dry
Consolidated	1-Waggoner	H&TC Sec-36 Blk-4	T.D. 2507	Dry
Humble	11-Waggoner	H&TC Sec-46 Blk-4	T.D. 2482	Dry
Phillips	1-Waggoner	H&TC Sec-5 Blk-5	T.D. 2401	Dry
Phillips	1-Waggoner	H&TC Sec-35 Blk-3	T.D. 2512	Dry

Young County

Company	Well Farm	Survey Sec. & Blk.	Depth	Init. Prod.
Ford et al	1-Johnson	Sergeant Sec-35 Blk-3	T.D. 535	Dry
Painter et al	1-Stringer	TE&L Sec-252 Blk-3	T.D. 901	Dry
Peckham	1-Willett	TE&L Sec-1920 Blk-3	T.D. 654	Dry
Pennell et al	5-Johnson	Sergeant Sec-1920 Blk-3	T.D. 598	Dry
Riggs	1-Goldston	Meyer Sec-10 Blk-3	T.D. 2450	Dry
Atkinson et al	4-Ford	Carter Sec-10 Blk-3	T.D. 2630	Dry
Brooken et al	1.....	Games Sec-10 Blk-3	T.D. 4500	Dry
Prairie	3-Kunkel	BBB&C Abst-1701 Blk-4	1132-1140	95
Steel et al	7-Snider	Wilson Abst-1276 Blk-4	559-571	35
Kleiner et al	22-Langston	TE&L Sec-1490 Blk-4	561-592	15
Kleiner et al	23-Langston	TE&L Sec-1490 Blk-4	557-580	15
Mook Tex	6-Davis	TE&L Sec-1487 Blk-4	548-549	50
Riggs	13-McKinley	TE&L Sec-1489 Blk-4	587-602	10
Christie Bros	1-Hatfield	Kutch Sec-1489 Blk-4	2375-2415	30
Justin	2-Eddleman	TE&L Sec-2693 Blk-4	2078-2100	130
Lindsay Drlg	2-Craig	Ross Abst-246 Blk-4	2077-2092	65
Paull	2-Allen	Lynch Blk-4	2090-2104	10
Schermerhorn	2-Thompson	TE&L Sec-2692	2071-2086	40
Stovall	7-Stovall	..... Sec-2692 Blk-28	3965-4336	50
Sun	3-Davis	Davis Sec-2692 Blk-28	3350-3368	15
Texas-Pacific	6-Downell	TE&L Sec-1211 Blk-28	3368-3381	60

WEST TEXAS

Crane County

Duffey	2-Cowden	CCSD Sec-19 Blk-28	T.D. 2705	Dry

Edwards County

Devils River	1-Paul	Turney Sec-167 Blk-28	T.D. 390	Dry

Floyd County

Exploration	1-Boon	Johnson Sec-167 Blk-28	T.D. 4015	Dry

Glasscock County

Evans	2-Roberts	W&NW Sec-157 Blk-29	3019-3050	200

Howard County

Wark	2-Roberts	W&NW Sec-137 Blk-29	1298-1394	169 (12 Hrs.)
Sprange	1-Roberts	W&NW Sec-156 Blk-29	2905-2915	1248
Schermerhorn	2-Roberts	W&NW Sec-157 Blk-29	2996-3016	4475

Loving County

Lockhart	1-Bowen et al.	W&NW Sec-92 Blk-1	4229-4238	14
Lockhart	2-Lockhart	H&TC Sec-85 Blk-33	4175-4220	40
Lockhart	1-Hubbard	H&TC Sec-83 Blk-33	4165-4179	206

Menard County

Moody	1-Allison	Kuhler Sec-1473 Blk-33	T.D. 3002	Dry

Pecos County

Cowboy Evans	1-Byron	H&GN Sec-114 Blk-11	T.D. 1451	Dry
Gulf Prod	18-Yates	RCSL	1162-1310	50

Winkler County

Pure	11-Hendricks	PSL Sec-41 Blk-B-5	2687-2775	50
Roxana-Texas	5-Hendricks	PSL Sec-40 Blk-26	2798-2810	140 (1 Hr.)
Roxana Texas	2-Hendricks	PSL Sec-40 Blk-26	2780-2812	242 (1 Hr.)
Roxana-Texas	3-Henderson	PSL Sec-40 Blk-26	2792-2806	1016 (1 Hr.)
Roxana-Texas	5-Hendricks	PSL Sec-40 Blk-26	2712-2826	175 (1 Hr.)
Atlantic	5-Hendricks	PSL Sec-46 Blk-26	2656-2710	8000
Amerada	1-Cowden	PSL Sec-3 Blk-B-12	3100-3105	95
Roxana-Texas	2-Hendricks	PSL Sec-39 Blk-26	2795-2830	174
Pure	3-Hendricks	PSL Sec-45 Blk-26	2560-2576	5,000 & 60M
Republic Prod	3-Hendricks	PSL Sec-42 Blk-B-5	2797-2816	246
Roxana	6-Hendricks	PSL Sec-45 Blk-26	2840-2850	1688
Roxana	3-Hendricks	PSL Sec-40 Blk-B-5	2608-2685	2047
Skelly	9-Hendricks	PSL Sec-40 Blk-26	2590-2645	200 (1 Hr.)
Roxana	5-Hendricks	PSL Sec-40 Blk-26	2618-2640	130 (1 Hr.)
Skelly	12-Hendricks	PSL Sec-40 Blk-26	2625-2727	670 (1 Hr.)
Southern Crude	T673B4-Hendricks	PSL Sec-33 Blk-26	2845-2935	45
Southern Crude	T88L1-Hendricks	PSL Sec-4 Blk-B-5	2880-2932	2116
Southern Crude	T88M8-Hendricks	PSL Sec-33 Blk-26	2708-2815	210
Southern Crude	T88M15-Hendricks	PSL Sec-33 Blk-26	2800-2801	1860
Southern Crude	T88M18-	PSL Sec-33 Blk-26	2790-2795	100 (1 Hr.)
Texon	4-Hendricks	PSL Sec-41 Blk-B-5	3018-3035	400
Texon	3-Hendricks	PSL Sec-41 Blk-B-5	3096-3102	100
Southern Crude	T88M20-	PSL Sec-33 Blk-26	2915-2920	256 (1 Hr.)

PANHANDLE

Gray County

Parton et al	1-Morse	H&GN Sec-5 Blk-26	2495-2515	20
Phillips	4-Riley	H&GN Sec-88 Blk-B-2	3140-3340	25

Hutchinson County

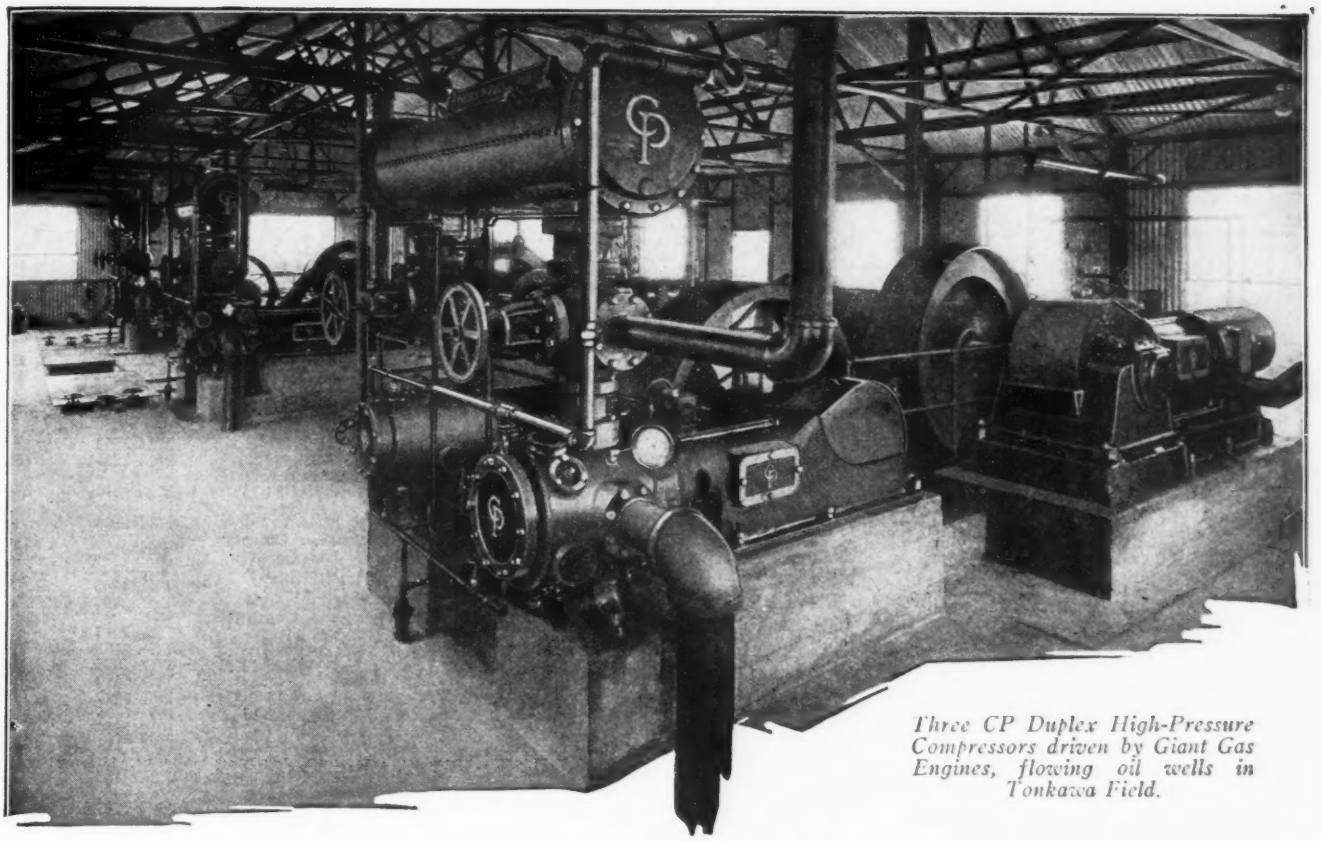
Dixon Creek	3-Smith	Sec-7 Blk-Y	2948-2988	50
McKinney	1-Works	TT Sec-5 Blk-Y-2	3202-3255	75M
Phillips	12-Whittenburd	H&TC Sec-71 Blk-46	2824-2828	120

Drilling Operations in Oklahoma, Kansas and Texas, Week Ended September 29, 1928

	Sept. 29 Loc.	Rigs	Drg.	S.D.	Week Ended Total	Sept. 22, 1928 Loc.	Rigs	Drg.	S.D.	Total
OKLAHOMA										
Osage	3	9	26	1	39	2	8	24	1	35
Bristow-Cushing	..	4	34	9	47	4	3	34	6	47
North Oklahoma	4	4	50	24	82	7	1	48	28	84
South Oklahoma	10	6	79	23	118	6	8	73	29	116
Muskogee	..	13	37	25	75	..	10	32	26	68
Okmulgee-Bristow	9	33	59	28	129	11	32	65	22	130
Seminole Dist.	18	72	302	37	429	12	63	318	32	425
Total Oklahoma	44	141	587	147	919	42	125	594	144	905
KANSAS	*74	..	195	60	329	*70	..	193	62	325

	Sept. 29 Loc.	Rigs	Drg.	S.D.	Week Ended Total	Sept. 22, 1928 Loc.	Rigs	Drg.	S.D.	Total
TEXAS										
Central	44	18	130	88	280	51	30	203	147	431
Panhandle	13	25	94	55	187	19	17	93	55	184
N. Central	27	34	126	34	221	29	36	110	37	212
West	79	29	231	121	460	65	38	237	132	472
Total Texas	163	105	581	298	1,148	164	121	643	371	1,299
New Mexico	6	4	23	17	50	7	4	26	13	50
GRAND TOTAL	287	251	1,386	522	2,446	283	250	1,456	590	2,579

*Location and Rigs combined.



Three CP Duplex High-Pressure Compressors driven by Giant Gas Engines, flowing oil wells in Tonkawa Field.

CP Compressors, Oil and Gas Engines For Oil Field Service

Oil-Field Equipment:

Compressors for flowing of wells,
Vacuum Pumps, Condensers and Compressors for refinery service,
Gas Compressors for pressure boosting,
Diesel Engines, 80 to 450 h. p.,
Gas Engines, 90 to 270 h. p.,
Portable Oil and Gasoline Engine-powered Air Compressors for cleaning wells and tank farm work.
Pneumatic Riveters, Chippers, Caulkers, Scalers, Drills, Reamers and Grinders to handle every portable tool job.

YOU can secure a CP Compressor to meet any oil-field requirement. There are more than 500 types and sizes, all thoroughly proven, for operation by oil and gas engines, belt or electric motor, in stationary, portable or semi-portable units.

Out of the fog of claims and counter-claims, the fact is, that in a list of installations recently appearing in one of the leading Oil Trade Journals covering the Seminole Field, there were practically as many CP units as all other makes combined.

If you have wells to flow, tanks to erect, pipe lines to lay, refineries or extraction plants to equip, let our oil-field engineers confer with you—they have had a wide experience in all branches of the industry.

J-284

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Completions in Oklahoma and Kansas, Week Ended September 29, 1928

OKLAHOMA

Beckham County

Company	Well	Location	Depth	Init. Prod.
C & H	1	NE 32-9-22 W	T.D. 3514	Dry

Creek County

Billingslea et al	1	SE NE 17-16-10	T.D. 2935	Dry
Billingslea	1	NE SE 17-16-10	T.D. 3360	Dry
Curtis et al	1	SE NE 9-18-9	T.D. 3122	Dry
Bailey et al	1	NW NE NE 32-19-9	T.D. 2988	Dry
Whitten et al	2	SE NW 11-17-10	1571-1600	1½M
Olean	1	NW SE SE 13-15-9	3443-3447	90

Jefferson County

Gypsy	5	NW SE SW 17-7-5W	778-780	20
Gypsy	4	SW SE SW 17-7-5	764-768	10
Bunn-Marvin	2	NE SE NE 24-7-6 W	709-800	10M
Bridwell et al	6	CSL SW SW 24-6-6W	1667-1669	115
Bunn-Marvin	1	NE SE NE 24-7-6W	T.D. 1000	Dry
Bridwell et al	1	SW 20-6-5W	T.D. 2201	Dry

Kay County

Carter-Ona	8	CEL NW SW 17-29-1 E	4082-4096	406

Kiowa County

Walker	1	NW NE 18-6-16W	T.D. 514	Dry

Marshall County

Smith	5	NE SE NW 24-5-5E	542-554	30

Muskogee County

Tillman	1	NE SE SE 2-14-18E	T.D. 980	Dry
Prichett et al	1	SE SW 24-14-16 E	T.D. 1765	Dry
Apex	1	SE NE SE 27-14-15	T.D. 2797	Dry
Metzger	1	CNL NW NE 33-15-18E	T.D. 1182	Dry

Okmulgee County

Harsha et al	3	SE SW NE 34-16-14	T.D. 1938	Dry
Lambert	1	SW NE NW 21-14-15	1190-1202	.10M
Wentz	1	SE NW NE 32-15-13	T.D. 2675	Dry
Star Dev.	4	NW NE 15-13-14	745-775	1M

Osage County

Clint Moore et al		NE NW SW 9-21-9	415-420	3
Mundy	1	NW SE 4-20-9	T.D. 2180	Dry

Pottawatomie County

Mid-Cont.	1	SW SE NE 20-7-5	4212-4237	4495
Slick	1	NE SE SW 19-7-5	4274-4306	3799
Magnolia	2	SW NW SE 19-7-5	4135-4159	9219
Gypsy	2	NE NW 25-7-4	4572-4587	237
Sinclair	1	SW 24-7-4	4150-4205	240
Shaffer	1	NE SE SE 23-7-4	4076-4083	850

Pontotoc County

Texas	1	NW SW 18-5-8	2610-2690	850
I. T. I. O.	1	NE SE SW 18-5-8	2659-2731	1059

Seminole County

Slick	4	SE NE SE 15-7-6	4329-4330	583
Magnolia	2	SE NW 11-7-6	4188	184
Roxana	2	SW NE NW 23-7-6	4373-4380	646
Gypsy	3	SW NE NE 22-7-6	4290-4303	1100
Skelly	2	NW SE NE 14-7-6	4585-4596	515
Independent	3	SW NW SE 14-7-6	4223-4233	1184
Gypsy	8	NW SE 14-7-6	4430-4440	1000
Carter	4	SE SW NE 14-7-6	4240-4250	675
Blackwell	2	SW 14-7-6	4628-4630	435
Mid-Cont.	4	NE SE SE 11-7-6	4280-4292	960
Gypsy	3	NE SW SE 11-7-6	4232-4242	1955
Carter	1	SW NE SE 11-7-6	4144-4157	180
Gypsy	2	SW SE SW 33-8-6	4529-4534	1042
Pine	5	SE NE SE 26-8-6	4322-4325	632
Pine	3	NE SW SE 26-8-6	4151-4156	1010
Barnsdall	3	NE SE SW 2-9-5	4538-4493	58
Skelly	2	SW SE NE 1-9-5	4315-4330	2736
Minnehoma	1	NW NE 4-7-6	T.D. 4925	Dry
Slick-Gypsy	1	SE SW SW 36-9-6	T.D. 4728	Dry

Sequoyah County

Quxinton	F	SW 8-7-18E	2000-2055	12M

Stephens County

Magnolia	7	13-1-4W	2942-2951	95
Pace et al	2	SW NW SW NE 18-2-7W	T.D. 1891	Dry
Margay	5	SE SW NW SW 7-1-8	T.D. 3885	Dry

KANSAS

Butler County

Garden et al	1	SE NW NE 6-27-6E	2715-2752	350
Blue Stem	3	CWL NW SW 5-72-6	2712-2755	150

Coffey County

Sheedy et al	1	SE SW NW 11-23-13	1828-1840	35

Cowley County

Foster et al	1	SE NW 23-34-6	1142-1168	1M

Dickinson County

Empire	1	NE SW 3-12-3	T.D. 2980	Dry

Ellis County

Derby	1	CNW 25-12-17W	T.D. 4068	Dry
Davis et al	1	SW NE 15-12-16W	T.D. 3809	Dry

Greenwood County

Simmons et al	1	SE NW 2-22-11	T.D. 2045	Dry
Griffith et al	1	NE 36-24-8E	T.D. 2458	Dry
Derby et al	1	CWL NW NW 28-24-13	T.D. 1656	Dry
Kansas	1	SE 7-25-9	T.D. 2410	Dry
Mendenhall et al	1	C NW SE 5-25-13	1487-1495	.75M
Skelly	6	NE SW NE 30-22-13	1698-1706	150
Haverhill	19	C N½ SE 4-23-13	1612-1645	40
Lassen et al	6	SW NW SW 6-25-9	2195-2215	175

Lyons County

Superior	1	NE SW 13-21-10	T.D. 2185	Dry

Marion County

Phillips	1	NW SE SE 22-17-4	2369-2419	150

Morris County

Gen. Util	1	SE 10-16-7	1415-1430	5M

Sumner County

DeForest	2	C SE NE 35-30-2W	1926-1929	.75M
Roxana	1	NE SW 14-32-2	1625-1648	45
Roxana	2	CSL NE SW 14-32-2	1592-1628	80
Wasson et al	12	NW SE SW 14-32-2	1257-1277	60

Completions in North Louisiana and Arkansas, Week Ended September 27, 1928

Lousiana—Bossier Parish

Company	Well	Location	Depth	Yield
Ark. Nat. Gas Corp.	Van Hoose B-4	36-16-12	2440	16M gas
Palmer Corp.	Jeter No. 1	24-17-12	1707	2M gas

Claiborne Parish

Gulf Ref. Co.	Langston-Baird No. 11	24-21-8	1260	10 bbls.

Caddo Parish

Texas Company	C. M. L. No. 47	23-21-15	4016	salt water, abd.

Morehouse Parish

Nat. Gas Prod. Co.	Patton No. 1	12-20-4E	2194	5M gas

Webster Parish—Spring Hill

Magnolia Pet. Co.	Cook No. 1	2-22-11	2711	150 bbls.

Webster Parish—Cotton Valley

Company	Well	Location	Depth	Yield
Dixie Oil Co.	Cox No. 1	15-21-10	4714	salt water abd.

Arkansas—Ouachita County

Timberlake et al.	Carnes No. 1	27-13-17	2622	salt water abd.

Nevada County

Humble O. & R.	Groves B-6	1-14-21	1132	45 bbls.

Union County—Rainbow City

Ohio Oil Co.	H. R. F. Goode No. 1	6-17-13	3011	288 bbls.
Oil Well Corp.	Slade No. 2	3-17-14	3257	125 bbls.
Sun Company	Schmidt No. 2	16-17-14	2875	250 bbls.

New Field Operations in Oklahoma, Kansas, Panhandle, North, North Central and West Texas, Week Ended September 29, 1928

OKLAHOMA

Carter County

Company	Well No. Farm	Location
Magnolia	1-Ratliff	NE NW NW 29-1-3 W
Magnolia	2-Watson	NE NW SE 19-1-3 W

Creek County

Wallace et al	4-Layton	NE 3-17-11
Roxaline	1-Gilcrease	NE 33-17-12

Garvin County

Magnolia	11-Jones	NE SE NW 14-1-3 W

Grady County

Blakes	1-Foster	C SE NW 23-5-7 W

Hughes County

Gypsy	1-Tiger	SW NE 5-8-9 E

Jefferson County

Bridwell et al	7-Spring	CNL SW SW 24-6-6 W

Marshall County

Smith	6-Null	NW SW SW NE 24-5-5 E

Muskogee County

Gilden	2-Mathews	SE NW NE 19-15-15 E
Foltz	1-Grimmett	SE NE 9-15-17 E
Cherokee Pub. Serv.	1-Jackson	SE NE NE SW 10-15-17 E
Williams	4-Warrior	C NE NE 17-14-17 E
Metzger et al	4-Francis	CWL NW SE SW 1-14-18 E
Jolly	1-Crabtree	SE NE 2-14-18 E
Tillman	2-Callahan	SE SE 2-14-18 E
Hughes et al	1-Scott	CWL SE SW 12-14-18 E
Mussellem	1-Stover	SE SW SE NE 4-13-19 E

Okfuskee County

Transcontinental	4-Ogle	SW NE NE 4-9-9 E
Wilcox	1-Martin	SE 22-13-10
Umbrum	1-Johnson	SE SW SE 2-10-11 OWD

Okmulgee County

Apache et al	1-Monday	NW SE NE 1-12-12
Rebold	2-Beaver	CNL NE NW 22-13-12
Dixie	1-McKendre	SE NW 17-13-11
Cusick et al	4-Rowe	NW SE NW 21-16-14
Star Dev.	5-Scott	NE NW SE NE 15-13-14 E
Wallace	11-Colbert	NW SE 14-14-14
Misener	3-Colbert	NE SW 14-14-14
Texas	3-Asbury	NE SE SE 8-15-14 E

Osage County

Devonian	3	SW SE SW 30-21-10
Moore-Ohio Osage	12	SW 9-21-9
Moore-Ohio Osage	11	NW SE SW 9-21-9
Superior	2	SE SW NE NW 8-22-11
Presbury et al	1	NW 15-23-8
Peters	6	NE SW NW 26-25-9
Morton	1	NE SE 1-26-6

Pawnee County

Mann et al	1-Richards	SW NW NW 23-20-9

Pontotoc County

Texas	4-Lucey	NW NE 19-5-8 E
Sun Ray	1-Sarney	NE NW 19-5-8 E
Homaokla	7-Berry	SW NE SE 19-5-8 E
Texas	5-Lucey	SW SE 18-5-8 E
Ramsey	5-Miller	NW SW 17-5-8 E
Superior-Hogg	2-Boyd	NW SE NW 32-5-5 E

Pottwatomie County

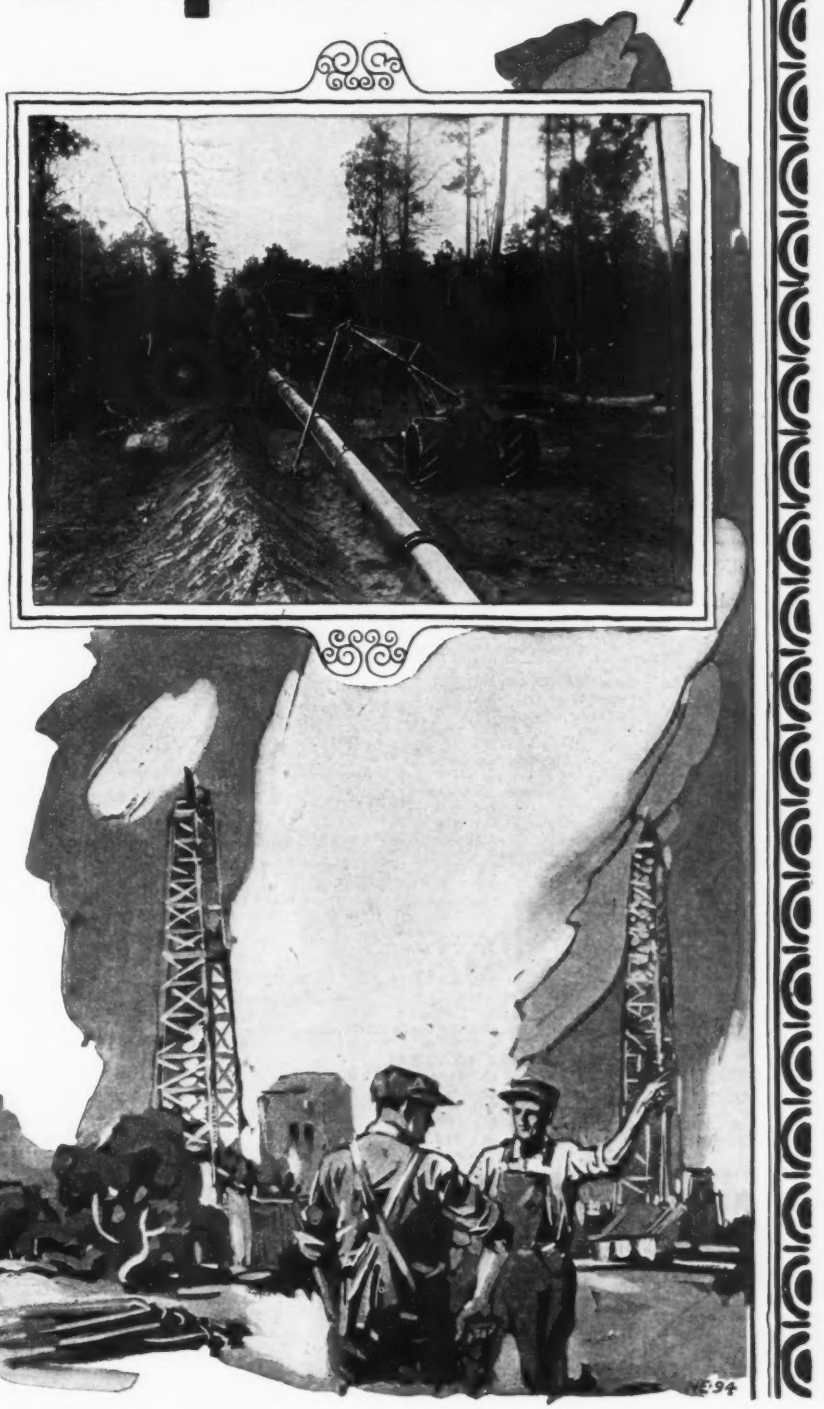
Cal-Cul	1-Davis	SW SE SW 19-8-5 E
Slick	3-Smith	SW NW SE 30-7-5 E
Sinclair	7-Nadash	NE NW SW 29-7-5 E
Sinclair	6-Nadash	SE SW NW 29-7-5 E
Sinclair	5-Nadash	NW SW 29-7-5 E
Gypsy	2-Johnson	SW SE NW 29-7-5 E
Independent et al	2-Lowe	NE SE SW 29-7-5 E
Sinclair	1-Kah-Dot	SW NW NW 21-7-5 E
Roxana	1-Smith	SW NW 21-7-5 E
I. T. I. O.	2-Weaver	NW SW 21-7-5 E
Mid-Continent	3-Guinn	NE SE NE 20-7-5 E
Mid-Continent	2-Guinn	SE NE 20-7-5 E
Magnolia	7-Youts	SE NW SW 20-7-5 E
Magnolia	2-Youts	SW SE SW 20-7-5 E
Magnolia	2-Fyke	NE SE 20-7-5 E
Pure	3-Thomas	NE 26-7-4 E

(Continued on Page 46)

Unified Responsibility

The Hope Company is the one organization serving the natural gas and oil industry which is ready and qualified to assume entire responsibility for a pipe line enterprise "from well to meter". It is not only ready, but it has repeatedly done so—to the satisfaction of all concerned.

More than this, the Company is ready also to undertake field surveys, market analysis, and aid in financing and organization—as it has repeatedly done in the past.



HOPE

ENGINEERS CONTRACTORS

HOPE ENGINEERING COMPANY

DESIGNERS MANUFACTURERS

MOUNT VERNON, OHIO, U.S.A.

NEW YORK, N.Y. DALLAS, TEX. TULSA, OKLA. CASPER, WYO. HOUSTON, TEX. SHREVEPORT, LA. LOS ANGELES, CAL.

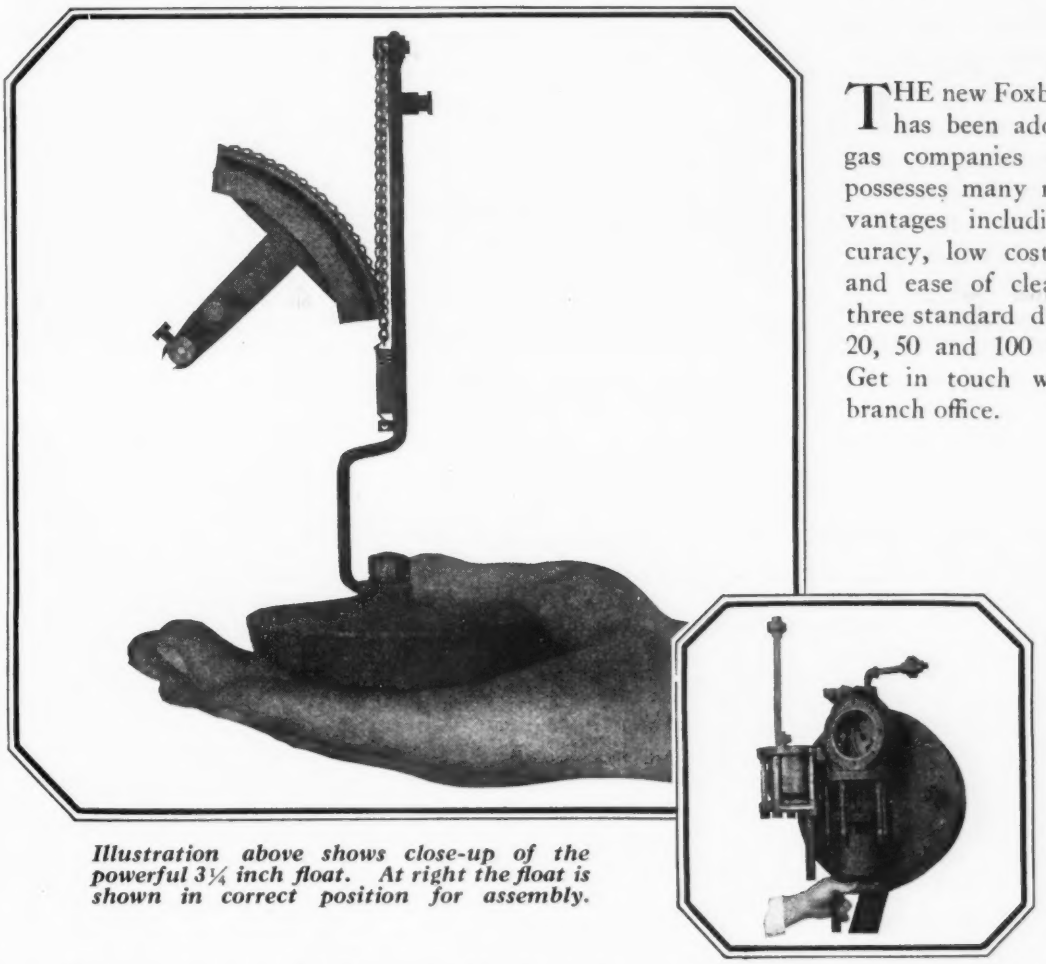
New Field Operations in Oklahoma, Kansas, Panhandle, North, North Central and West Texas, Week Ended September 29, 1928

(Continued from Page 44)

Company	Well No. Farm	Location
Sinclair	2-Gilbreath	NE SE SE 25-7-4 E
Sinclair	1-Gilbreath	NW SE SE 25-7-4 E
Gypsy	4-Bruno	NW NE NW 25-7-4 E
Magnolia	5-Wilborn	SE SW SE 24-7-4 E
Magnolia	1-Wilborn	NE NW SE 24-7-4 E
Seminole County		
Roxana-Marland	1-Herndon	NW NE 7-8-6 E
Gypsy	1-Sumsey	NW SW 22-10-7 E
Sequoyah County		
Quinton Spelter	1-Daugherty	C SW NE 10-7-18 E
Stephens County		
Atlantic	1-Taylor	SW NW 12-1-4 W
Pace et al	6-Bristowe	SE NE SE NW 18-2-7 W
Pace et al	3-Bristowe	SW NW NW 18-2-7 W
Magnolia	2-Thomas	CEL SE SE 25-1-9 W
Magnolia	14-Wilson	NW SW SW 1-2-5 W
Heydrick et al	2-Pool	NE SW SW 35-1-8 W
Lone Eagle	6-Simpson	SE NW SE 34-1-8 W
Carter	5-Simpson	NE NW SW SE 34-1-8 W
Tulsa County		
Kennedy et al	1-Bruner	NW SW NE 9-18-13 E
Wagoner County		
Kiskaddon	2-Howard	SE SW NE 8-15-16 E
Hale Ford	4-Brown	NE SE SE NW 36-16-17 E
KANSAS		
Butler County		
Rogers	2-Nichols	CEL NW SW 31-26-6 E
Empire	1-Marshall	NW SW SW 15-27-6 E
Empire	2-Reetz	SE NW SE 34-27-5 E
Wichita	5-Orban	SW NE NE 10-26-4 E
Cowley County		
Brady-Hollis	1-Sterling	SW SE NW 5-35-5 E
Lewis Prod	2-Pierce	SW NW SE 30-31-6 E
Elk County		
Blandell et al	2-Rittiz	NEc 29-31-10 E
Denton et al	2-McKee	C NE NE 16-31-10 E
Sonner	1-Lot-4, Blk-42	NW SW SW 10-31-10 E
Craft-Hunt	1-Moline	SE SW SW 10-31-10 E
Litteral	1-Moline	NE SW SW 10-31-10 E
Ozark Drlg	1-Moline	NW SE NW 10-31-10 E
Ellis County		
Mid-West Expl	36-Furthmeyer	SE 25-12-16 W
Greenwood County		
Bisango et al	1	NW SW SW 8-25-13 E
Empire	9-Edwards	NW SW NE 21-23-11 E
Lewis Prod	1-Gruber	NW SW 33-22-13 E
Amerada	3-Luthi	NE NW SW 29-22-13 E
Derby et al	1-Weizler	SW 21-22-13 E
Derby	1-Schwab	SW SE 20-22-13 E
Harvey County		
White Eagle et al	1-Miller	C SE 3-24-1 E
Jackson County		
Garvin et al	1-Lutes	SW NW NW 27-7-15 E
Lyons County		
Superior	1-Schroeder	NE SW 13-21-10 E
McPherson County		
Graham Bros. et al	1-Rolandez	SE SW SW 30-18-2 W
White Eagle	1-Larson	SE NW SW 31-18-2 W
Saline County		
Boyle et al	1	SW SE 21-16-1 W
Sedgwick County		
Fisher et al	1-Strickland	SE NW SE 18-26-2 E
Bu-Vi-Bar et al	2-Lyons	NW SW SW 7-26-1 E
Kayser et al	1-Stroot	SW NW 8-26-2 W
Sumner County		
Tidal	1-Horton	SE 17 35 2 E
Champlin	5-Latta	NW SE NW 9-30-2 W
TEXAS		
NORTH EAST CENTRAL		
Brown County		
Kone Prod	17-Hickman	Blk-783
Anna Belle	11-Hickman	Blk-783
Gulf Prod	1-Belvin	Sec-42
Texas Fidelity	1-Butler	Blk-783
Ballard	1-Baugh	Blk-638
McMurray et al	19-Teston	Blk-155
Hammond-Garrett	5-Curry	Blk-624
Mitcham et al	1-Keeler	Blk-624
Baker et al	1-Gaines	Sec-43
Callahan County		
Ames et al	1-Finley	Sec-11
Coleman County		
Texas National	2-Stevens	Blk-57
Magnolia	21-Morris	Blk-80
Magnolia	22-Morris	Blk-727
Kingwood	1-Kemp	Blk-742
Gahkey et al	1-Overall	Sec-10
Roth-Faurot	4-Smith	Sec-19
Henshaw	1-Amson	Sec-16, Blk-1
Comanche County		
France	1-Short	Sec-50, Blk-2
Davis	1-Perry	Sec-50, Blk-2
Jack County		
Shaw et al	1-Nichols	.....
Seaboard	1-Enloe	.....
Osage	1-Clayton	.....
Ellis et al	10-Fee	Blk-4
Jones County		
Atkinson et al	1-Hudspret	Sec-22
Clark et al	1-Thomas	Sec-13, Blk-19
Phillips	6	Sec-19, Blk-19
Roeser-Pendleton	1-Higgs	Sec-30
Roeser-Pendleton	1-Grayson	.....
Texas	1-Camp	Sec-13, Blk-19
Williams et al	1-Pain	Sec-3
Independent	1-Smith	Sec-51, Blk-18
Shackleford County		
Sterling	9-Lenmore	.....
James	10-Newell	Sec-59
Fidelity et al	1-Alexander	Sec-42, Blk-13

Company	Well No. Farm	Location	Survey
Roeser-Pend'eton	25C60-Cook	Sec-60	ET
Roeser-Pendleton	36C60-Cook	Sec-60	ET
Roeser-Pendleton	1A140-Cook	Sec-140	ET
Wichita Prod	4-Meyers	Sec-1	GH&H
Stephens County			
Ward et al	2-Sloan	Sec-16	Yeschans
Glendridge	1-Keathley	Sec-24, Blk-5	T&P
Lacey et al	1-Harrington	Sec-19, Blk-6	T&P
Brown	5-Riddle	Sec-67, Blk-4	T&P
Throckmorton County			
Holden	1-Walker	.....	McCoy
Humble	1-Whitaker	Sec-956	TE&L
Erin Prod	1-Davis	.....	Garner
McCurdy	3-Reynolds	Sec-19	AB&M
Stock et al	1-Keeley	Sec-31	Comanche Ind. Res.
NORTH TEXAS			
Archer County			
American et al	1-Cermosek	Sec-240	TE&L
Magnolia	16-Richardson	Blk-15	Anderson
Madden-Hunt	4-Richardson	Blk-1	Anderson
Madden-Hunt	3-Richardson	Blk-1	Anderson
Texas	17-Richardson	Blk-6	Anderson
Wichita Prod. et al.	1-Richardson	Blk-1	Anderson
Montague County			
Superior Prod	1-Miller	Blk-58	Well
Wichita County			
Hines-Panhandle	6-Waggoner	Blk-2	GC&SF
Hines	1-Burnett	Sec-6	Meade
United Prod	1-Hodges	Sec-1	HT&B
Producers Drlg	2-Bishop	.....	Netherly
Wilbarger County			
Derby	4-Waggoner	.....	Purnell
Consolidated	3-Waggoner	Sec-5, Blk-5	H&TC
Consolidated	13-Waggoner	Sec-5, Blk-5	H&TC
Baker et al	5-Waggoner	.....	Purnell
Simms	6-Waggoner	Sec-5, Blk-5	H&TC
Fain-McGaha	16-Waggoner	Sec-24, Blk-4	H&TC
Fain-McGaha	15-Waggoner	Sec-24, Blk-4	H&TC
Young County			
Stafford	1-Leberman	Sec-270	TE&L
Magnolia	2-Johnson	Blk-13	Sergeant
Kennedy	1-Johnson	Blk-7	Sergeant
Reed-Wooten	1-Drum	.....	Cook
Albright et al	1-Green	Sec-1496	TE&L
Four Oil Co	1-Bryan	Sec-1367	TE&L
Hall-Bundy	1-Johnson	Blk-11	Sergeant
Kleiner et al	24-Langston	Sec-1490	TE&L
Riggs	15-McKinley	Sec-1489	TE&L
Pennell et al	1-Johnson	.....	Sergeant
Stivers et al	1-Dent	Sec-757	TE&L
Albright et al	1-Swain	Sec-1465	TE&L
Halsell	1-Marshall	Sec-617	TE&L
Amerada	1-Wilkerson	Sec-724	TE&L
Lindsay Drlg	3-Craig	.....	Ross
Stovall	11-Stovall	Blk-2	.....
Forbes	1-Willaims	.....	Morris
WEST TEXAS			
Coke County			
Louisiana	1-Powers	Sec-157, Blk-2	H&TC
Cates-Dennis	1-Mims	Sec-47, Blk-W	T&P
Culberson County			
Hiller et al	1-McGregor	Sec-14, Blk-81	PSL
Edwards County			
Gale	1-Jenigan	Blk-2	GC&SF
Howard County			
Marland	2-Clay	Sec-138, Blk-29	W&NW
Magnolia	11-Kelly	Sec-124, Blk-29	W&NW
Green	3-Clay	Sec-127, Blk-29	W&NW
Empire	1-Clay	Sec-127, Blk-29	W&NW
Andrews et al	1-Neel	Sec-17, Blk-32	T&P
F. H. E	6-Roberts	Sec-137, Blk-29	W&NW
Merrick-Bristow	2-Roberts	Sec-137, Blk-29	W&NW
Merrick-Bristow	3-Roberts	Sec-137, Blk-29	W&NW
Mid-West Explo	2-Clay	Sec-139, Blk-29	W&NW
Loving County			
Lockhart	2-Allen	Sec-82, Blk-33	H&TC
Upton County			
Superior	1-McClintic	Sec-206, Blk-F	CCSD
Winkler County			
Cranfill-Reynolds	1-Hendricks	Sec-16, Blk-26	PSL
Magnolia	1-Scarborough	Sec-1, Blk-C-22	PSL
Marland	3-Hendricks	Sec-34, Blk-26	PSL
Republic Prod	5-Hendricks	Sec-42, Blk-B-5	PSL
Skelly	2-Hendricks	Sec-39, Blk-26	PSL
Southern Crude	T-683-A4-Hendricks	Sec-35, Blk-B-5	PSL
Southern Crude	T-88-14-Hendricks	Sec-30, Blk-B-5	PSL
Southern Crude	T-88-M6-Hendricks	Sec-33, Blk-26	PSL
Southern Crude	T-88-M25-Hendricks	Sec-33, Blk-26	PSL
Southern Crude	T-88-R2-Hendricks	Sec-27, Blk-26	PSL
Southern Crude	T-88-T5-Hendricks	Sec-34, Blk-26	PSL
Southern Crude	T-672-D3-Hendricks	Sec-28, Blk-26	PSL
Southern Crude	T-88-N4-Hendricks	Sec-28, Blk-26	PSL
Southern Crude	T-88-U6-Hendricks	Sec-41, Blk-26	PSL
Southern Crude	T-89-C1-Hendricks	Sec-35, Blk-B-5	PSL
Southern Crude	T-89-E2-Hendricks	Sec-40, Blk-B-5	PSL
Southern Crdue	T-88-D1-Hendricks	Sec-40, Blk-B-12	PSL
Texon	1-Hutchins	Sec-47, Blk-26	PSL
PANHANDLE			
Gray County			
Lefors	6-Shaw	Blk-1	Leach
Lefors	5-Shaw	Blk-4	Leach
Texas	4-McLarty et al.	Sec-1, Blk-1	ACH&B
Pure	1-Davis	Sec-86, Blk-3	I&GN
Phillips	3-Johns	Sec-87, Blk-3	I&GN
Hutchinson County			
Dunnigan Bros	1-Luginbyhl	Sec-4, Blk-1	TWGN
Phillips	2-Pool et al.	Sec-82, Blk-46	H&TC
Phillips	1-Garford et al.	Sec-77, Blk-46	H&TC

STRONG... *and sturdy*

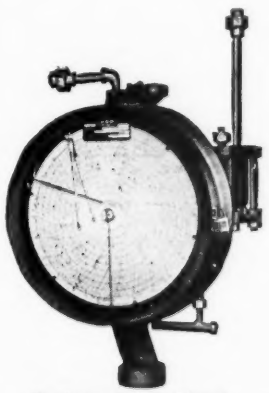


THE new Foxboro Orifice Meter has been adopted by oil and gas companies everywhere. It possesses many revolutionary advantages including strength, accuracy, low cost of maintenance and ease of cleaning. Made in three standard differential ranges, 20, 50 and 100 inches of water. Get in touch with our nearest branch office.

Illustration above shows close-up of the powerful 3¼ inch float. At right the float is shown in correct position for assembly.

Just one glance at this float assembly shows the sturdiness that is built into the new Foxboro Orifice Meter. Note the 3¼ inch drop forged steel float—the most powerful float used in any orifice meter in the market.

Combined with unusual strength the accuracy of this meter has established a new standard of performance. It is powerful enough to overcome dirt and to operate, even if neglected for a time. There are no alibis built in a Foxboro Orifice Meter.



Foxboro Orifice Meter

THE FOXBORO COMPANY

Neponset Avenue, Foxboro, Mass., U.S.A.
Magnolia Bldg., Dallas — 205 So. Cheyenne Avenue, Tulsa, Okla.
J. E. Treacy, Strada Golesti No. 9, Ploesti, Roumania

New York Chicago Philadelphia Pittsburgh Detroit Rochester, N. Y. Boston Atlanta
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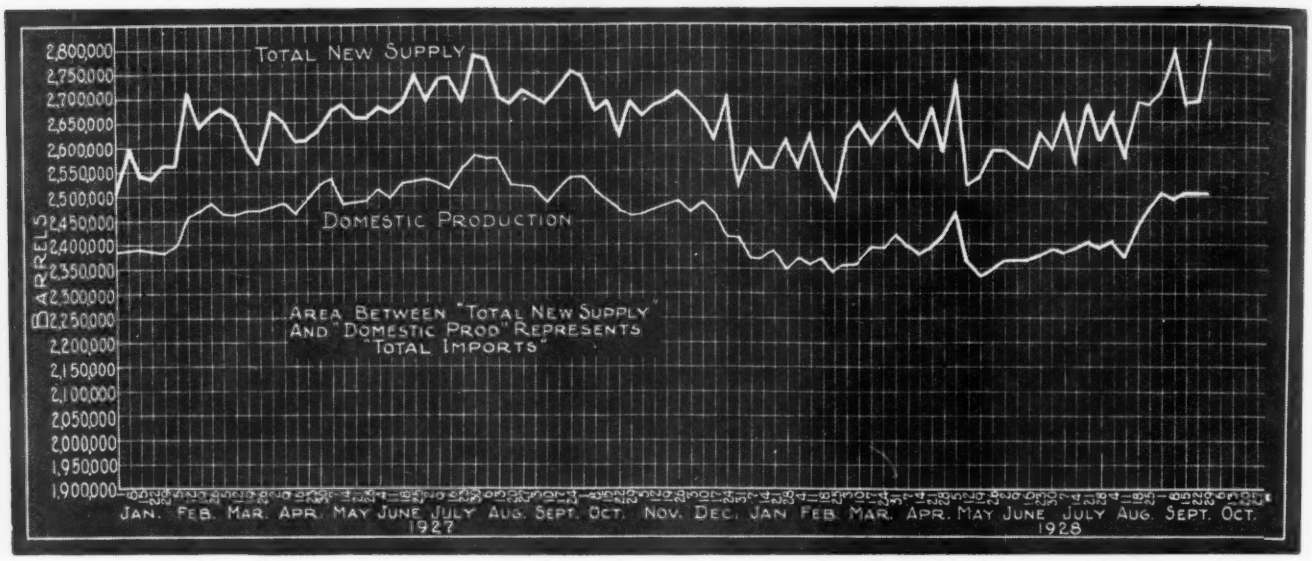
FOXBORO
REG. U. S. PAT. OFF.
THE COMPASS OF INDUSTRY

Instruments for Controlling, Recording and Indicating Temperature, Flow, Humidity and Pressure

Daily Average Crude Oil Production and Imports



Daily average gross output of United States, by fields, for week ending with dates below as compiled by American Petroleum Institute

PRODUCTION SUMMARY

	Sept. 29	Sept. 22
Production east of Rockies	**1,884,300**	**1,877,350**
Increase		**6,950**
Total production in U. S.	**2,509,800**	**2,508,850**
Increase		**950**
Crude oil imports	**321,000**	**183,714**
Increase		**137,286**
Total crude supply	**2,830,800**	**2,692,564**
Increase		**138,236**

OKLAHOMA

	Sept. 29	Sept. 22
North Braman	2,850	2,850
South Braman	1,400	1,450
Blackwell	3,300	3,700
Hubbard	2,750	2,750
Thomas	1,100	1,150
Tonkawa	12,000	11,850
Garber	8,200	8,000
Burbank	27,900	27,900
Osage, outside Burbank	26,950	26,950
Cushing	20,000	19,850
Yale Jennings	7,650	7,600
Davenport	1,750	1,800
Bristow-Slick	20,800	20,800
North Okmulgee	14,600	14,600
Pearson	2,800	3,050
Lyons-Deaner	5,650	5,700
St. Louis	116,100	119,100
Allen Dome	22,750	21,100
Cromwell	8,750	9,050
Papoose	4,000	4,100
Wewoka	5,450	5,500
Seminole	42,950	44,150
Bowlegs	47,800	47,700
Searight	11,600	11,850
Little River	131,300	119,850
Earlsboro	81,350	85,600
Duncan district	7,650	7,650
Graham	5,250	5,200
Fox	1,650	1,650
Healdton	13,750	13,750
Hewitt	9,450	9,450
Scholem Alechem	15,450	15,500
Others	50,100	50,550
Total, Oklahoma	735,100	731,750
Increase		3,350

KANSAS

Greenwood County	26,500	26,600
Florence-Covert	950	950
Peabody-Elbing	3,250	3,250
Eldorado-Towanda	12,750	12,750
Augusta-Fox-Bush	3,250	3,250
Rainbow Bend	1,400	1,500
Russell	3,900	4,000
Churchill	8,800	8,900
Oxford	9,300	9,350
Others	28,900	29,000
Total, Kansas	99,000	99,550
Decrease		550

NORTH LOUISIANA

Homer	4,200	4,250
Haynesville	5,800	5,800
Caddo, light	9,150	9,000
Caddo, heavy	3,000	3,200
De Soto, Red River	3,900	3,850
Elm Grove	550	550
Bellevue	800	800
Cotton Valley	4,300	4,300
Urania	6,650	6,700
Pleasant Hill	500	500
Total, North Louisiana	38,850	38,950
Decrease		100

ARKANSAS

El Dorado	5,250	5,200
Champagnolle	12,000	12,700
Smackover, light	7,300	7,300
Smackover, heavy	55,600	55,600
Stephens	1,000	1,050
Nevada	1,250	1,300
Lisbon	1,850	1,850
Others	100	100
Total, Arkansas	84,350	85,100
Decrease		750

TEXAS (Outside Gulf Coast)

Panhandle District

Hutchinson County	32,500	32,000
Carson County	6,500	6,600
Gray County	23,300	20,800
Wheeler County	750	900
Others	1,750	600
Total, Panhandle District	64,800	60,900
Increase		3,900

North Texas

Burkburnett	9,600	9,700
Electra	13,150	13,300
Iowa Park and K-M-A	3,600	3,700
Wilbarger	31,800	30,500
Archer County	19,650	19,800
Montague-Cooke	10,850	10,950
Others	600	600
Total, North Texas	89,250	88,550
Increase		700

West Central Texas

Stephens County	7,100	7,150
Eastland-Desdemona	6,750	6,600
Brown County	11,750	11,600
Coleman County	3,600	3,700
Callahan County	3,500	3,450
Shackleford County	10,950	10,800
Young County	8,000	8,100
Throckmorton County	800	900
Palo Pinto County	400	400
Jack County	1,550	1,500
Others	700	750
Total, West Central Texas	55,100	54,950
Increase		150

West Texas

Jones County	4,100	4,000
Mitchell and Scurry Counties	2,850	2,900
Howard County	20,700	21,250
Reagan County	18,050	18,450
Crane and Upton Counties	57,050	58,200
Crockett County	2,850	2,750
Pecos County	68,000	69,000
Winkler County	166,600	170,300
Others	1,400	1,400
Total, West Texas	341,600	348,250
Decrease		6,650

East Central Texas

	Sept. 29	Sept. 22
Mexia	6,600	6,600
Currie	550	550
Richland	500	500
Wortham	1,600	1,600
Corsicana-Powell	10,400	10,200
Nigger Creek	1,750	1,300
Others	850	850
Total, East Central Texas	22,250	21,600
Increase		650

Southwest Texas

Luling	13,600	13,500
Lytton Springs	1,150	1,000
Somerset	700	650
Laredo District	8,650	8,750
Dale	1,300	1,350
Others	500	550
Total, Southwest Texas	25,900	25,800
Increase		100
Total, Texas (Outside Gulf Coast)	598,900	600,050
Decrease		1,150

GULF COAST

Coastal Texas

West Columbia	7,450	7,500
Damon Mound	800	1,800
Big Creek	3,250	4,400
Boling	1,650	2,000
Blue Ridge	7,750	7,400
Pierce Junction	11,300	9,200
Humble	1,300	1,300
Goose Creek	6,800	6,700
South Liberty	3,350	3,450
Hull	12,500	10,300
Saratoga	1,000	1,050
Batson	1,400	1,400
Barber's Hill	600	600
Sour Lake	3,250	3,300
Spindletop	38,350	39,800
Orange County	3,600	3,650
Others	3,900	3,850
Total, Coastal Texas	108,250	107,700
Increase		550

Coastal Louisiana

	Sept. 29	Sept. 22
Vinton	4,200	4,300
Sulfur Dome	4,300	2,350
Lockport	3,400	3,400
Sweet Lake	3,600	3,600
Evangeline	950	900
East Hackberry	2,550	2,100
Edgerly	950	1,050
Sorrento Dome	850	800
Others	4,450	2,950
Total, Coastal Louisiana	25,250	21,450
Increase		3,800
Total, Gulf Coast	133,500	129,150
Increase		4,350

ROCKY MOUNTAIN

Wyoming

	Sept. 29	Sept. 22
Salt Creek	41,650	41,450
Grass Creek	2,300	2,400
Elk Basin	1,000	1,100
Big Muddy	2,550	2,550
Lost Soldier	4,050	4,150
Rock Creek	2,800	2,500
Lance Creek	450	500
Oregon Basin	4,350	4,350
Others	3,800	3,150
Total, Wyoming	62,950	62,150
Increase		800

Montana

Cat Creek	1,600	1,600
Sunburst	8,300	7,800
Others	700	150
Total, Montana	10,600	9,650
Increase		1,050

Colorado

Moffat (Craig)	1,300	1,250
Fort Collins	2,600	2,050
Florence	1,100	1,100
Others	2,100	2,150
Total, Colorado	7,100	6,550
Increase		550

New Mexico

Hogback	500	500
Artesia	1,050	1,050
Rattlesnake	200	300
Others	200	200
Total, New Mexico	1,950	2,050
Decrease		100
Total, Rocky Mountain	82,600	80,300
Increase		2,300

California

Santa Fe Springs	35,500	36,000
Long Beach	192,000	196,000
Huntington Beach	52,500	52,000
Torrance	17,000	17,000
Dominguez	11,000	11,000
Rosecrans	5,500	5,500
Inglewood	29,000	29,000
Midway-Sunset	74,000	74,000
Ventura Avenue	55,000	55,000
Seal Beach	26,000	28,000
Others	128,000	128,000
Total California	625,500	631,500
Decrease		6,000

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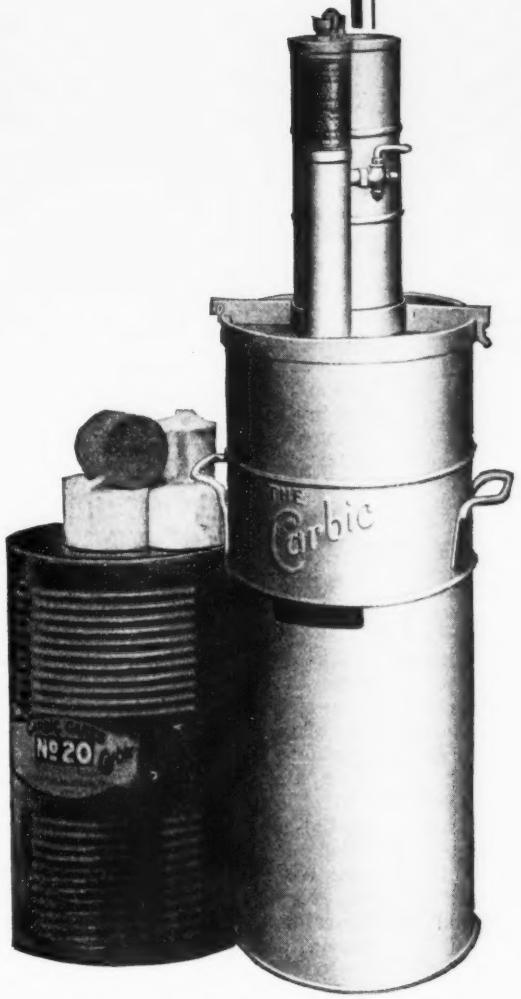

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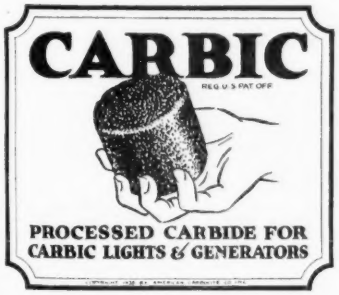


A standard drum of Carbic contains forty cakes, size No. 20. Carbic is distributed by the Union Carbide Sales Company through its national chain of warehouses.

Breather Roof Tank Hook Up in Texas Checks Corrosion Loss

TULSA, Sept. 28

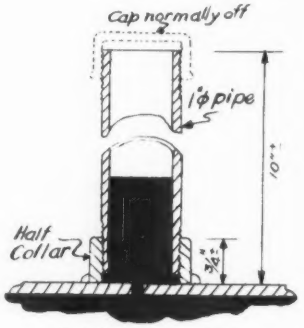
PARTIAL solution of the storage tank corrosion problem in West Texas appears to have been effected. The solution is complete so far as tank roofs are concerned, according to tests which have been conducted over a long period. In addition, a retarding of the corrosion of tank bottoms also has been shown.

A method originated by J. H. Wiggins, consulting engineer, Tulsa, is now in use on some 50 tanks of 80,000-barrel capacity in the Midland, Texas, district.

Mr. Wiggins is an authority on evaporation loss prevention, his work with the Bureau of Mines several years ago being of high value to the oil industry. He is the inventor of the Wiggins floating roof and the Wiggins breather roof, both of which are widely distributed in the oil industry. The prevention of corrosion on tank roofs under the Wiggins method involves the use of the breather roof.

This roof has previously been described in NATIONAL PETROLEUM NEWS and by the manufacturers, the Chicago Bridge & Iron Co. and is well known to oil men familiar with storage equipment. For purposes of this article it is sufficient to say that the roof plates are welded together in such manner as to form a great diaphragm, welded firmly to the angle at the top of the tank shell.

This diaphragm is not fastened to the roof framing at any point, but rests upon it when in the down position. Thus the roof moves up and down according to the expansion or contraction of the air-vapor mixture, the space above the oil being sufficient to hold the mixture without loss.



Detail of gas release

Starting with the theory that corrosion to the under side of storage tank roofs in West Texas was caused by the breathing in of air and the consequent condensation of the water in this air, forming with the sulfur in the oil H_2SO_4, Mr. Wiggins proceeded to the thought that, if there were no room inside the tank for air, corrosion of the roof would be checked.

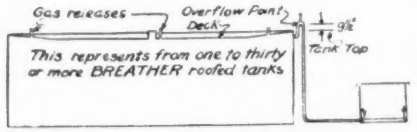
The first test on the applicability of this method was made on an 80,000-barrel tank at Aransas Pass, Tex. The tank was filled with salt water until the roof was supported by the water, the air being allowed to escape by manually opening gas releases. More water was pumped in and the roof was gradually raised above the top of the tank until it was 7½ inches higher than the top angle. Thus, Mr. Wiggins piled up water above the usual horizontal level.

The roof then assumed the shape shown in an accompanying drawing. (Fig. 1.) It is to be noted that in this position there is no gas (air) trapped under the deck and that the deck plates, starting from the edge rise rapidly to maximum height and the rest of the deck is perfectly level. In this position, the total head of sea-water above the top of the tank was nine inches, this being equivalent to 10¼ inches of oil. No leaks were set up and apparently no excessive strains.

That test was sufficient evidence that the breather roof could be used in this manner for oil storage to eliminate the corrosion of tank decks.

The method involved when this use is made of the roof is shown in seven drawings at the bottom of this page. The figure at the top left shows the layout before any oil is introduced into the system. The large tank at the left represents from one to any number of 80,000-barrel tanks. The small tank at the right represents the one accumulator tank used for any number of storage tanks.

The storage tanks are connected with the accumulator tank by a two-inch pipe line system which allows the 80,000-barrel tank or tanks to overflow when the oil head is eight to nine and one-half inches above the top of the tank. Under date of Feb. 1, the main storage tanks are shown filled about two inches above the top and all gas or air has been allowed to escape. By May 1, the breather roof has been raised by the thermal expansion of the oil to position simi-



This one tank is the accumulator tank to receive the overflow from all the storage tanks. It may be large or very small

Feb. 1. The storage tanks are filled until the oil is just above the top of the tank. All the air escapes through "gas releases." There is only oil and no gas or air in contact with any portion of the inside of the shell or roof, hence corrosion of the roof is reduced to the same status as the tank shell, which is below the oil line. Saving the roof will help the tank bottom by preventing rust falling from the roof

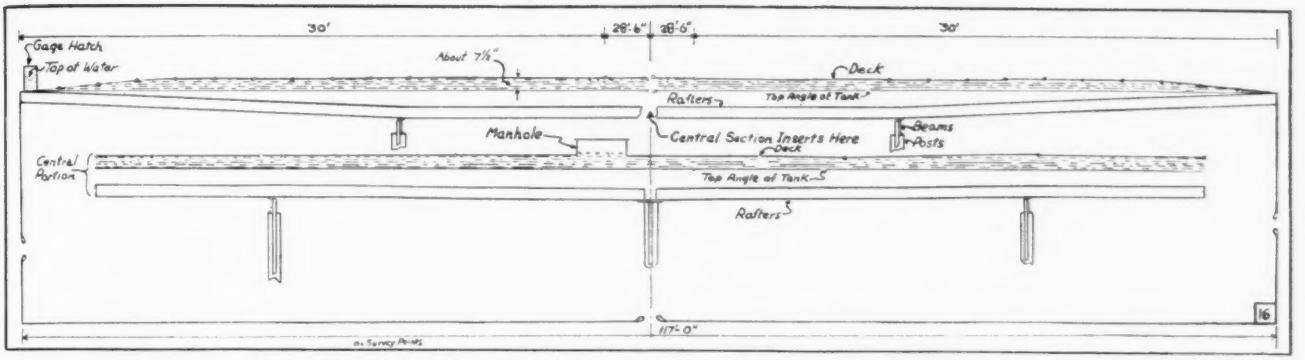
By about May 1 the oil has expanded and raised the breather about 8 inches above the top of the tank. The oil is just ready to run out the overflow

From May 1 to about Aug. 1 the oil overflows from all the tanks into the accumulator tank which gradually fills or is drawn from, if the latter is too small. The accumulator may be a 250-barrel tank with all excess run into the pipe line

By Nov. 1, the oil has contracted until the breather again is down to a point just above the top of the tank

It is now necessary to pump from the accumulator or from the pipe line into the storage tanks until the breather is again about 8 inches above the top of the tank as shown under Nov. 2

Contraction continues until about Feb. 1, but no further refilling of breather is necessary. This process gives 2,000 extra barrels storage per tank

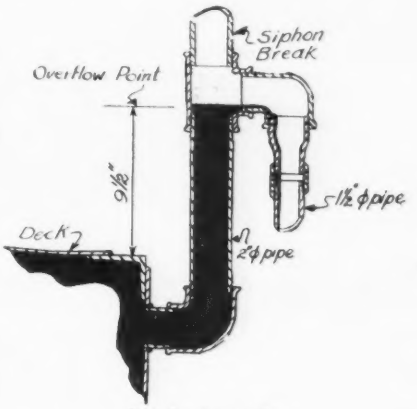


Drawing, Fig. 1—Details of Tank Roof "Breather" Type

Raised above top of tank by liquid pressure; head above top angle = 9 inches of seawater—sp. gr. = 1.025—equivalent to 9.23 inches fresh water or 10.25 inches of 0.9 oil. Roof raised 7½ inches above tank top = nearly 1,000 barrels above top angle. The roof may move up or down within prescribed limits to take care of the thermal expansion or contraction of the oil

lar to that shown in Drawing No. 1. At about this date further thermal expansion will be taken care of by the oil overflowing through the two-inch lines and collecting in the accumulator tank.

Such further thermal expansion occurs until some time in August, when, due to temperature change, thermal condensation begins and continues until, at about Nov. 1, the breather roof has descended to about a level position. If the oil further contracts, air will be taken into the tank, which would start corrosion. To prevent this, oil is pumped from the accumulator tank into the main storage tanks until the breather is again raised to a position about six inches above the top of the tank. This single refilling, says Mr. Wiggins, is enough to take care of all



Detail of overflow

thermal contraction in an 80,000-barrel tank and, with this system, is the only operation necessary each year.

Corrosion is thus prevented by eliminating the presence of air and the consequent dispensing with condensation of water on the under side of the deck. As for protecting the bottom of the tank, with this method no pieces of rust flake off the deck to settle to the bottom. It has been noted on many tank bottoms that corrosion of an electrolytic nature is started by such rust particles.

One tank farm in the Midland district has 25 tanks of 80,000-barrel capacity hooked into a single overflow tank; another has 13 and another has 10 tanks. Three more are filled intermittently to keep the roof "painted" with oil. One company has avoided the laying of extra pipe line to the overflow tank by hooking in the steam lines which run to the big storage tanks.

Oil Field Families Turn Out for Safety Films

TULSA, Sept. 28.—It is a well known fact in foreign countries that all Americans are rich and should pay a top price. In the United States the oil men and movie stars are the ones supposedly rolling in wealth.

Don J. Wallace, director of the safety division of the Mid-Continent Oil & Gas Association, has discovered in the course of his experiences as a director of safety movies that the reputation of wealth in the movies is widespread. Recently Mr. Wallace stopped at a gasoline and pop stand on a trip from Tulsa to a "location" where he was to film an accident movie.

While drinking pop he noticed a cage of squirrels by the stand and the lady in charge of the stand, desiring to show off their accomplishments, had them drink out of a bottle for him. Mr. Wallace directed his camera man to take a shot for a flash in his oil news reel while the animals were performing.

Immediately the woman in charge of the stand demanded a share of all profits accruing from the showing of movies of her squirrels. Mr. Wallace explained that the movies were taken by the Mid-Continent Oil & Gas Association in its campaign to reduce accidents in the field and are shown to workers and their families free of charge.

This brought a snort from the squirrel owner who asserted that she knew that this is a commercial world and that people don't go around showing pictures to prevent accidents—not free anyway.

The attitude of the pop stand operator is not the attitude of Mid-Continent oil field and refinery workers at 150 points in the field who are now viewing the association's second accident movie of the present year. At first there was an attitude of suspicion in some quarters of the field since some workers did not understand the motives of the oil companies in undertaking the safety campaign.

On Sept. 21 the writer accompanied Mr. Wallace to Bristow to attend one of the six-reel movie shows. The local committee at that point headed by C. S. Study of the Prairie Pipe Line Co., had obtained the use of the city auditorium seating about 400. A local orchestra had been obtained to accompany the pictures and the meeting advertised among oil men.

The show was scheduled to begin at 8 p.m. but by 7:15 o'clock quite a number of workers from the Bristow fields were in the hall. Many had brought their wives and children with them. By 7:45 o'clock the hall was filled and no one came in late. The pictures throughout the evening were watched carefully by the crowd and Mr. Wallace was congratulated by many on the realistic way in which recent field accidents were dramatized for the camera and the correct working method which would have prevented the accidents.

Other members of the Bristow committee who worked with Mr. Study in arranging the meeting included George Farbro of the Prairie Oil & Gas Co., T. E. Armstrong of the Skelly Oil Co., W. B. O'Heran of the Carter Oil Co., M. E. Teague of the Texas Pacific Coal & Oil Co., C. B. Gibson of the Twin State Oil Co., W. W. Winesburg of the Barnsdall Oil Co., C. C. Crockett of the Mid-Continent Petroleum Corp., W. B. Sears of the Oklahoma Pipe Line Co. and Clyde McGowan of the Tidal Oil Co.

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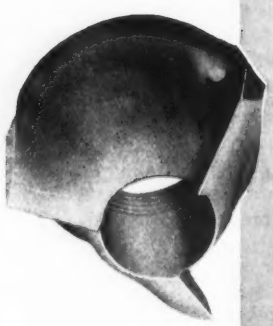
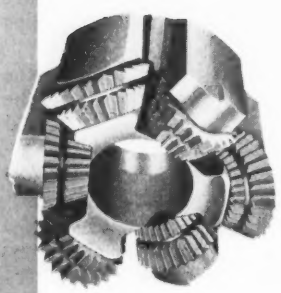


The picture immediately above is that of the Hughes Soft Formation Cutter Head, while the Hard Formation Cutter Head is shown at the right



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General view of hydrogen sulfide gas purification plant installed in Gulf Production Co.'s McElroy ranch field, Crane County, Texas

Gas Purification Plant Supplies Fuel For Field and Camp

By Paul Wagner
N. P. N. STAFF WRITER

HOUSTON, Sept. 28

AFTER charging every conceivable expense to operation of its purification plant on the McElroy ranch property in Crane county, west Texas, it costs the Gulf Production Co. less than 8 cents per 1000 cubic feet to purify the gas used there for field fuel and camp purposes.

Direct overhead costs will not exceed about 2½ cents per thousand. Higher costs mentioned allow for amortization of capital expenditure, depreciation and so forth.

The purification plant, which removes the deadly and highly corrosive hydrogen sulfide from gas produced on the McElroy property, accomplishes two-fold results:

(1)—It provides the Gulf's extensive camp with "sweet" gas in a region where the inhabitants generally "climb for water and dig for wood;" that is to say, they mount windmills to get water and obtain wood only by digging up the roots of mesquite or other rank growth.

(2)—Other than electricity, it provides the only fuel supply that will not eat out parts of lease equipment because of the admixture of hydrogen sulfide gas and sulfur crude vapors with oxygen in the atmosphere, thereby forming acidulous compounds of highly corrosive character.[1]

Besides the advantages mentioned, the Gulf operates a small ice manufacturing unit in connection with the gas purification plant. The ice-making installation is operated at no extra cost and saves the company $24 a day as compared with the expense of shipping in supplies.

About 400,000 cubic feet of hydrogen sulfide gas is purified daily, although the Gulf plant is capable of handling nearly twice that quantity when needed.

The only direct operating expenses incurred are the wages of men for two shifts, the electrical current used to run pumps in the plant and the cost of soda ash for the purification chamber. About 150 pounds of soda ash is used daily to purify 400,000 cubic feet of gas.

The plant, which cost approximately $51,000 to install, was built by the Koppers Co., of Pittsburgh, which designed the process originally for handling by-products of coke manufacture in Pennsylvania. The Gulf installation is the only one known to have been made in the oil country.

Impure gas coming from the field passes through an 8-inch intake to the small tower shown in the accompanying picture. The tower is eight or nine feet in diameter and about 40 feet high. In moving upward through baffles the gas comes in intimate contact with a 3 per cent solution of soda ash introduced into the lower tower through the pipe shown at the left of the picture.

The purified gas is taken off from the top of the small tower, testing 99 per cent, or more, free of hydrogen sulfide. The washing solution then is pumped into the top of the larger 60-foot tower to be cleaned. It passes downward over baffle plates in contact with fresh air supplied through two 30-inch pipes, the solution then going to the soda ash tanks shown in the foreground of the two towers. From these tanks, into which about 150 pounds of fresh soda ash is placed daily, the washing solution is returned to the smaller, or cleaning tower.

Poisonous refuse from the gas is passed into the upper atmosphere, where it will do no harm, through the small diameter 100-foot tower shown in the picture.

In winter, a heater operating at 65-70 pounds pressure is used to keep the soda ash solution from freezing.

It has been found in operating the Gulf's plant that the gas from the solidly owned McElroy field contains 6100 grams of hydrogen sulfide to the 100 cubic feet of gas.

University (Church & Fields) pool properties, immediately north of the McElroy development, produce gas of similarly high hydrogen sulfide concentration.

The two Crane county areas show the highest sulfur gas concentrations in west Texas. Yates, Big Lake and Winkler fields show lower concentrations in about the order mentioned. Highest concentrations are about 13 per cent by volume, in Crane county, and the lowest are from 2 to 5 per cent in the Big Lake and Winkler fields.

[1] NATIONAL PETROLEUM NEWS, pages 68-72, April 18, 1928.

Flowing Wells Against Pressure Sand In the Seminole Field

By John Power
N. P. N. STAFF WRITER

TULSA, Sept. 28

IT IS a fact accepted by petroleum engineers that the ratio of yield of an oil sand to its total yielding capacity is in direct ratio to the efficiency with which the original gas with the oil in the sand has been used as a propelling agent. This efficiency is aided materially by controlling the flow of the well as early in its life as is practicable. When this is accomplished the original reservoir pressure is maintained over a greater period of time, edge water is held back, and oil is allowed to flow ahead of the water, thus preventing the large quantities of oil being trapped in less porous parts of the sand body by streaks of water in the more rapidly drained areas.

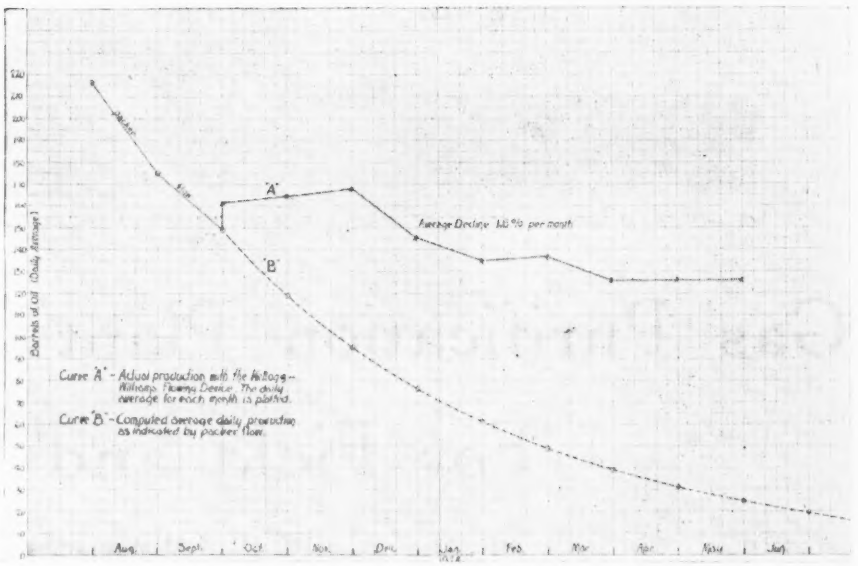
By this means more gas is kept in solution in the oil, thus making it easier for the oil to flow through the sand. The water, which is not affected by the gas, is retarded in its movement.

The Barnsdall Oil Co. has been extremely successful in producing some Hunton lime wells in the Seminole district by means of the Kellogg-Williams flowing device,* which functions partly as a bottom hole choke. While top and bottom hole "beaning" are still subjects of debate among petroleum engineers, the results which the Barnsdall Company has obtained from this type of controlled flow, indicate that a more constant pressure on the face of the sand can be maintained by bottom hole regulation than by constriction at the surface, as in the flow-line.

Just how much difference a correct back pressure on a single well, or on an entire field will make in the ultimate recovery from either the well or field has not as yet been determined. Nevertheless, such data as have been compiled indicate that the controlled type of flow is in all probability more desirable than the open flow method of producing in nearly all instances. It is entirely logical to assume that where there is a given amount of gas and oil, a reduction in the gas oil ratio compels just that much more gas to do the useful work of moving oil.

It is essential to determine just the amount of back pressure which can be applied without interfering with the rate of flow. There is a critical pressure or flow of gas through an orifice which will do the work. Against too great a back pressure it would be impossible for the gas to function to the proper extent. Too little back pressure would be an inefficient application of the back pressure theory. Through a line having a definite pressure, and through which oil is being moved at a definite rate of flow, the pressure can be constricted to a point where the back pressure is 56 per cent of the true pressure without decreasing the rate of flow, it has been found in experiments conducted by Barnsdall engineers. Experiments by S. F. Shaw, whose early articles on the air/gas lift were first published in NATIONAL PETROLEUM NEWS, shows that it is possible to hold a back pressure on an oil sand of 34 per cent of the original head without decreasing the rate of flow of production.

On the Barnsdall Oil Co. Mary Carter No. 1, a Hunton lime well in the Seminole area, bottom hole regulation of back pressure was installed Oct. 15, 1927, by means of a Kellogg-Williams flowing device. To July 1, 1928, the well produced more than 36,000 barrels. On a packer flow the well made from 10 to 20 per cent water and basic sediment with the oil, and had an average monthly decline of 20.8 per cent. Average monthly decline since the installation of the bottom hole pressure control system has been 1.8 per cent. The total gas produced amounted to 28,551,750 cubic feet, an average of 778 cubic feet per barrel.



Typical curve with Kellogg-Williams flowing device on a Hunton lime well in the Seminole field

A table of the daily average production by months follows, together with figures showing the gas/oil ratio per average barrel of production. The casing head pressure remained practically constant at 400 pounds, slightly higher than when the well was being produced by the packer flow method. It is interesting to note that the gas/oil ratio is declining rather than increasing, as is usually the case with wells being produced by open flow methods.

Month	Daily Av. Prod	Gas/Oil Ratio	Casing head Pressure
	bbls.	cu. ft.	lbs.
Oct. 1927	137	990	400
Nov.	159	900	400
Dec.	167.5	900	400
Jan. 1928	140.3	900	400
Feb.	134	850	400
Mar.	129	800	400
Apr.	125	750	400
May	125	700	400
June	124.5	660	400

By projecting the production curve of the well when it was being produced on the packer flow system, production would have amounted to but about 15,000 barrels over the same period of time as against the actual total of 36,733 barrels. Water en-

*NATIONAL PETROLEUM NEWS, Feb. 23, 1927, page 53.

You can tell genuine puddled wrought iron by the spiral knurl cut into the surface of every piece of Reading pipe.

RE D

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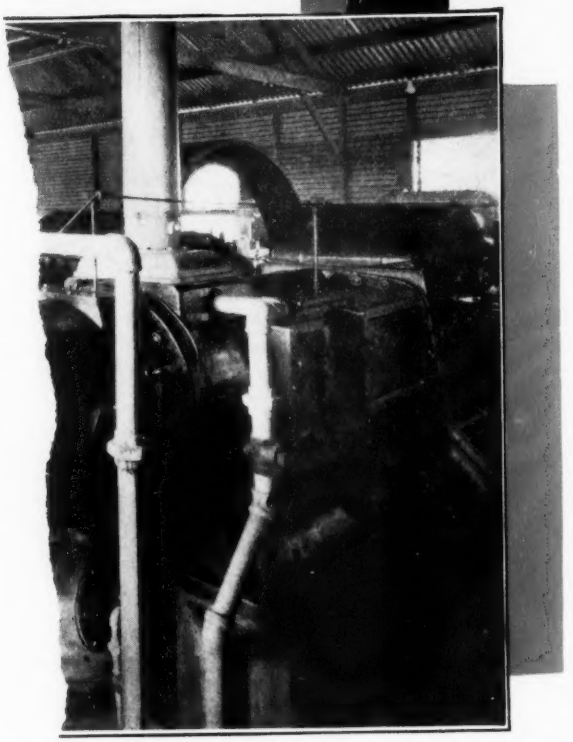
Grove City, Pa.



ninole field, operating 8 165-H. P. Bessemer 0" Bessemer V. H. Compressor Cylinders.

EMER

croachment has been halted, as the total production is now pipe line oil. The average gas/oil ratio per barrel of oil was 1600 cubic feet when the well was on the packer. This saving of gas was enough to move 45,000 barrels of oil, provided it had been in the sand to move. The well is still flowing steadily, with 103 barrels per day average production. There is no decrease in the casing head pressure, which remains at 400 pounds, indicating that the well should remain a valuable producer for some time to come.

On the Barnsdall Oil Co. Henry No. 2, figures arrived at in the same manner as those for the foregoing well show 2034 barrels of oil which must be credited to the bottom hole pressure system as against the open flow method. This surplus was made from March, 1928, to June 30. A gas/oil ratio of 1300 cubic feet per barrel on the Kellogg-Williams flowing device as against 2200 cubic feet per barrel on the open flow saved 14,500,000 cubic feet of gas, enough to move 10,000 barrels of oil at the same gas/oil ratio as that required to produce the oil by the former method. On this well, which is also a Hunton lime well in the Greater Seminole area, the casing head pressure increased from 220 pounds at the time the device was installed to 340 pounds. Present production of the well is about 175 barrels daily.

The retarding of water encroachment, with its attendant decrease in the amount of emulsion which water produced with the oil causes, is additional evidence of the value of operating under back pressure. Another Barnsdall well, the J. Ingram, producing from the Earlsboro sand in the Earlsboro field of Seminole county showed a definite increase of three degrees in the gravity of the oil produced. For the 30 days following the first of June, when the flowing device was installed, the well produced 13,082 barrels of oil, an increase over the preceding month of 2282 barrels. The gas/oil ratio was reduced from 15,000 cubic feet to 1965 feet per barrel.

A 50 per cent dividend just paid by the Moutray Oil Co., of Abilene, brings total disbursements of this character to 300 per cent in four years. E. W. Moutray, head of the company, was identified with the Humphreys Corp's. activities in central east Texas before entering business for himself.

Principal properties are in Callahan county, in the sand pay region fringing the general Ranger territory on the west.

Besides Mr. Moutray, officers of the company are J. L. Halbert, Corsicana, vice president; J. Afton Burk, Cisco, secretary; and H. E. Bell, former head of the Oil & Gas Division, Railroad Commission of Texas, general attorney.

INDEX TO ARTICLES

Selected Bibliography on Petroleum Technology

Editor's Note—The brief abstracts of current literature printed below are so arranged that they may be cut apart and mounted on 3" x 5" library indexing cards. The indexing numbers assigned bring the cards into logical sequence in the files. The "Decimal Index of Petroleum Technology" gives the key to the articles. This book is published exclusively by NATIONAL PETROLEUM NEWS as a service to its readers. Price $1.00. Abstracts started April 4, 1928.

Lee, F. W., 368.

"Russian Papers on Measurements of Terrestrial Radioactivity"

U. S. Bureau of Mines Information Circular 6072.

This circular presents English translations of two papers printed originally in Russian, giving the results of radiometric explorations in the Maikovsky and Caucasus regions of Russia. Radiometric methods were first used in the location of ores containing a high percentage of radioactive substances, and for measuring radium emanations in springs producing water used for medicinal purposes. It is also thought that the methods described may offer a new means of geophysical prospecting for petroleum.

Recent studies of radiometric emanations from the earth have shown that slight changes in the radioactivity of various earth formations may be detected by comparatively simple methods, including photographic, ionization and calorimetric methods. A portable electrometer covered with lead 1-cm. thick was used in experiments conducted at Pyatygorsk in the Caucasus region, where marked fluctuations were observed. Application of these methods in searching for oil is based on the supposition that since petroleum is an organic compound, it has the power of absorbing radioactive emanations from surrounding formations, and that indications of radioactivity at the earth's surface would therefore be more intense in the vicinity of oil deposits. Experiments conducted in the Maikovsky district of Russia by the Radiometric Subsection of the Institute of Practical Geophysics, have shown marked increase in radioactivity in the vicinity of the oil deposits. By measuring the intensity of radiation at various points, it has been possible to construct radiometric contours. With the aid of filters, it has also been possible to determine the character of the earth's radiation. The paper also describes in some detail the several methods of measuring radioactivity, and gives a short bibliograph on the subject.

Chatfield, J. C. 960.

"Now It's Transportation by Oil" Article 1

National Petroleum News, Aug. 1, 1928, pp. 20-23

The article describes the rehabilitating methods applied to the Pierce Petroleum Corp. marketers in the southwest, and how E. D. Levy president, has applied his railroad knowledge to the problem of transportation by oil. The company has built a combination super service station and bus terminal at Springfield, Mo. Three structures are on the lot. One is the service station with connecting canopy to the terminal. The terminal has customary washrooms, a waiting room, restaurant, ticket and express office, telegraph and telephone accommodations, and soda fountain. At the rear of the lot is a combination wash and grease house. The terminal services busses and automobiles. A feature is that a car can be washed, greased, oil changed and gasoline tank filled in 15 minutes. The company is operating on methods similar to those used by railroads. All principal highways in the southwest have been marked, road maps have been replaced with time table type of guide, and the Ozark mountains have been exploited as a vacation center. The company is building a similar terminal at Rollo, Mo., with a second story to the station and terminal for dancing parties. Illustrated.

Petroleum Division, American Institute of Mining & Metallurgical Engineers 024.1

"Petroleum Development and Technology in 1927"

845 pages. Price $6.00 from A. I. M. & M. E., 29 West 39th. St., New York.

Three years ago the practice of binding the papers presented at meetings of the Petroleum Division of the A. I. M. & M. E. during each administrative year, under the above title, was initiated. The first two annual volumes have taught American petroleum technologists to look for this annual contribution as one of the most valuable publications of the year. The 1927 volume is in many respects more useful than its worthy predecessors.

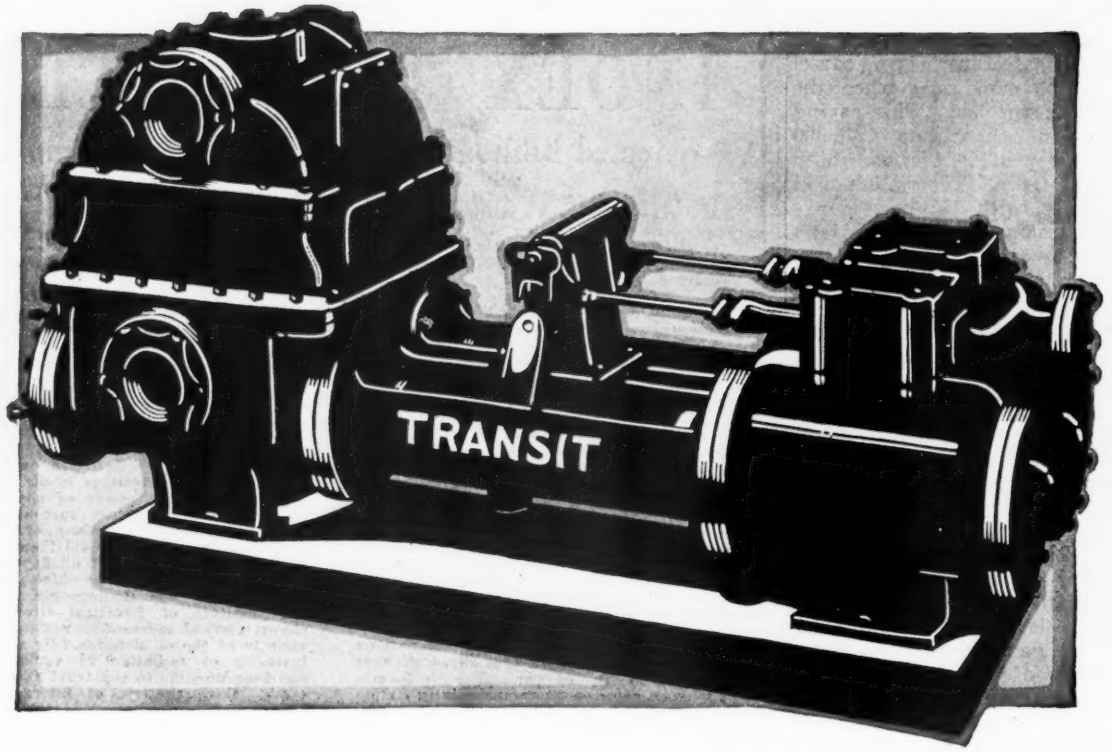
The major subdivisions of the Petroleum Division of the Institute—production engineering, refinery engineering, petroleum production and petroleum economics—are each represented by separate sections, and a portion of the volume is devoted to discussions incidental to the annual Round Table Conference on petroleum engineering education. A complete subject and author index shows that more than two hundred engineers contributed to the subject matter of the volume. Approximately half of it is devoted to papers and discussion on various phases of production engineering, including nearly 150 pages on the gas lift. Other topics in this section include gas-oil ratios, electricity in the oil fields, handling congealing oil and paraffin, methods of increasing extraction and deep well pumping and drilling technique. Refinery technology is represented by four chapters, devoted respectively to distillation methods, heat utilization, refinery control and refinery products and problems. The section on petroleum economics contains a group of valuable papers reviewing the trend of the industry, both as regards production of crude and refined products. An annual feature of the Petroleum Division's programme, is a review of the trend of production in all important oil fields and countries. The section of the volume presenting this material will be found the most recent and authoritative analysis of the production situation in all parts of the world.

J. C. Chatfield 092.

"Causes of Gas Lock and a Remedy Is Found Through Natural Gasoline Association Research Work"

National Petroleum News, May 30, 1928, pp. 19-20.

Dr. G. G. Brown of the University of Michigan, reported to Natural Gasoline Association that gas locking of motor car carburetors is due to excessive vaporization of motor fuels in carburetor ducts preventing sufficient fuel from reaching the manifolds. If the vapor pressure of the gasoline used does not exceed atmosphere at 130° F. there will be no vapor lock trouble in the modern motor car. Much of the motor car fuel trouble is caused by the application of heat to manifolds. Vacuum tanks may give rise to some vapor locking in extreme conditions.



TO build a suction pump, the cylinders of which will fill on each suction stroke, calls for the best in workmanship and design. The suction lift depends on the vacuum produced by the displacement of the pistons on the suction stroke. If the fluid end is designed well and made accurately, the vacuum will be high—the principal characteristic of a true suction pump.

The 12 x 10 x 18″ TRANSIT Duplex Separate Chest Type Suction pump, illustrated above, has been produced for over thirty years. In that time over 5000 of this one type have been manufactured and sold. They are furnished either cast iron or full brass fitted. Frequently, they are ordered with a solid acid brass fluid end for handling weak sulphuric acid solutions.

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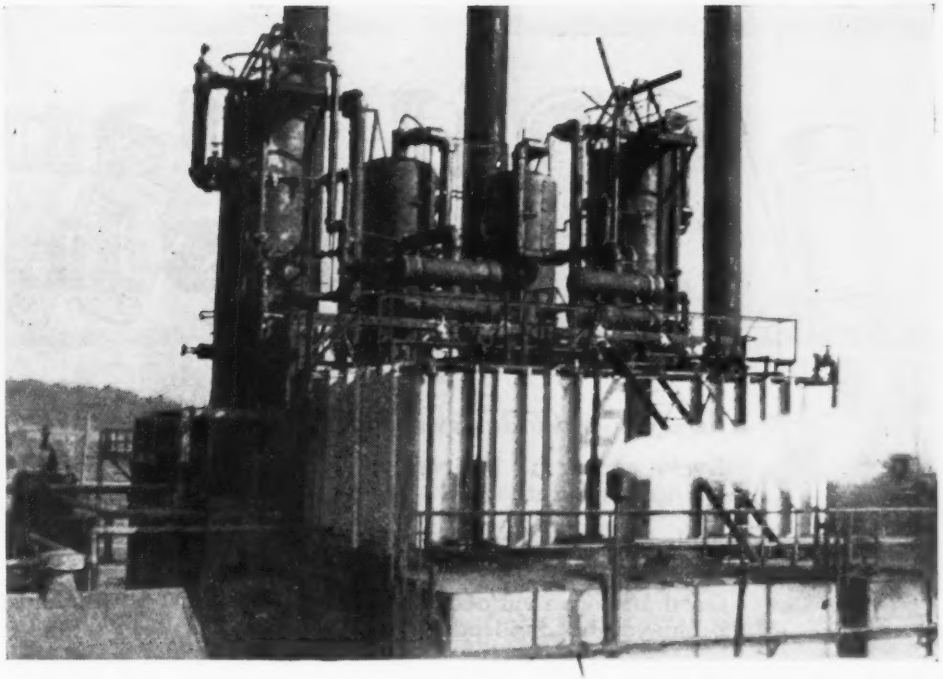

Rear view of the pipe still battery at the Barnsdall plant, showing the tower system

Quick Action Reduces Loss and Coking When Pipe Still Tube Fails

By J. C. Chatfield
N. P. N. STAFF WRITER

OKMULGEE, Sept. 28

LOSSES of oil and damage resulting from ruptured tubes in pipe stills have been reduced to a minimum by a system which has been worked out at the Okmulgee plant of the Barnsdall Refineries, Inc. Since the system has been in operation the loss of oil resulting from bursted tubes has been negligible.

Coking of undamaged tubes during and after a fire has been eliminated with the result that a pipe still can be gotten back on stream with less time lost and a smaller labor cost. This is due to the fact that the system employed purges the still quickly of all oil and prevents the contents of the undamaged tubes from coking after the charging pump is shut down and before the furnace begins to cool down from its normal high operating temperature.

The system in brief consists of promptly isolating a tube still from its crude supply and tower system and purging the tubes of oil under steam pressure. The time required for this is exactly 3½ minutes from the instant it is discovered that a tube has blown out.

Of course, evidence of a ruptured tube appears quickly in the control house as pressures and temperatures in the still rise sharply and are recorded on the charts. The stillman immediately shuts down his crude charging pump when this evidence appears. The thermostatic control on the transfer line from still to towers meanwhile has shut off the main fires in the furnace, leaving only a ⅜-inch pilot light burning.

Running from the control house to the still, the operator shuts off the pilot light and floods the furnace and space around the tube banks with live steam. He then closes a valve in the transfer line to shut off any liquid or vapors from backing into the still from the tower system and opens a valve which injects steam into the oil tubes in the furnace.

Coming back to the still after isolating the tower system the operator opens a valve between the coils in the furnace and a dump line which leads to an old shell still nearby and also cuts steam into this line. The contents of the tubes is quickly flushed into the old still which also may be flooded with steam. This old still has a vent pipe from the dome which is always open so that no back pressure will develop when the pipe still is being dumped.

No act on the part of the stillman is necessary to isolate the charging line from the still. A ball check valve at the oil inlet operates as soon as the charging pump is shut down.

There are 1300 feet of 4-inch tubes in each of Barnsdall's crude pipe stills so that the furnace coils contain about 20 barrels of oil. It has been found that the old shell still into which oil is dumped usually holds about 26 barrels of oil after a unit has been shut down by a tube accident.

The manual method of shutting down a pipe still unit has been described since it has been used exclusively. The operation, however, will be carried on automatically in case the stillman should not be at his post in the control house.

The only feature of the system which is not automatic is the injection of steam into the coils and the furnace but the manual control system is used since it can be carried out more quickly if the operator is on the job when evidence of trouble appears on the gauges.

The Barnsdall pipe still battery consists of two complete units of 4,000 barrels maximum rated capacity each. With a 4,000-barrel daily throughput each still will take 62 per cent of the crude charge overhead. The normal rate of operation of the stills is at a charge of 2,500 barrels each per day which permits taking 85 per cent of the charge overhead and reducing the fuel oil to 9 to 12 A.P.I. gravity. Two units were installed instead of one large unit to increase the flexibility of the plant.

Gordon T. Granger, superintendent

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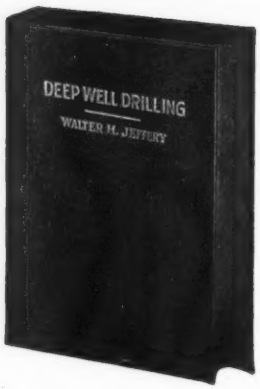
Good books on various phases of the oil industry will improve your mind, and pay you big dividends.



The second edition of "Deep Well Drilling" by Walter H. Jeffery is just out. The material in the first edition has been rewritten thruout with several new chapters on improvements in the art of drilling.

"Deep Well Drilling" discusses exhaustively cable tool drilling, rotary drilling, core drilling in all their phases; tells how to fish for lost tools; how to case, how to use packers, how to cement and how to shoot; how to plan operations intelligently; specify material, etc.

Every man engaged in the production of oil should have a copy. 648 pages, illustrated, price $6.

Field Geology

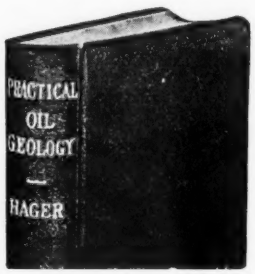
"Field Geology", by Fredrick H. Lahee, was written to serve the double purpose of pocket manual and textbook.

It covers methods of geologic surveying, the nature and construction of maps, sections and block diagrams, the interpretation of topographic and geologic maps, the solution of certain geologic computations and the preparation of geologic reports.

For those interested in petroleum geology, particular attention is called to the explanation of wells, logs and their correlation and application in the preparation of subsurface geologic maps.

It describes the porosity of sediments and causes and conditions of folding. There is also discussion of the fixed carbon ratio of coals.

$4



Practical Oil Geology

Dorsey Hager, petroleum geologist and engineer, has just come out with his new fourth edition of PRACTICAL OIL GEOLOGY.

His book deals with the application of geology to oil field problems, with new material on the origin of oil; porosity of oil sands; regional and local metamorphism of dykes and volcanic flows and their effects on oil structures; folding under volcanic flows; shallow core drill testing for structures; new tables on oil production; description of work of torsion balance and seismograph; new statistics on geological successes, etc.

PRACTICAL OIL GEOLOGY covers the work of outlining prospective oil lands, drilling and of actual oil-field development brought up to date. It is a clear, concise and practical work on oil geology.

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of the refinery, in designing the tower system has worked out a number of ideas with the result that the flow arrangement is quite different from that of the conventional pipe still refinery.

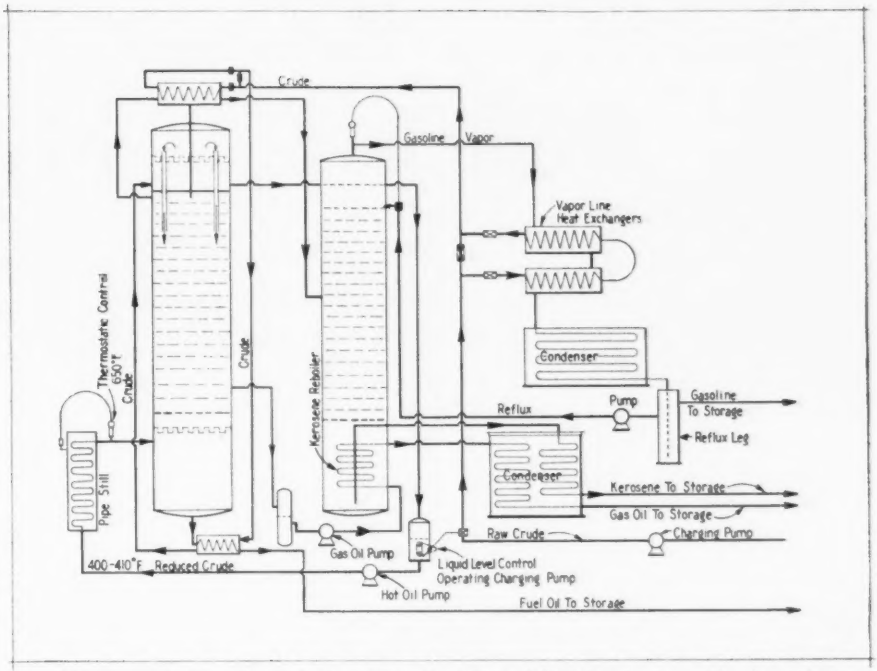
One of the most interesting features of the plant is the method of stripping crude of its light fractions before it is charged to the pipe still. It is Mr. Granger's theory that the serpentine coil type of pipe still increases refining losses through the creation of fixed gases when crude is charged to the still before it is stripped of its gasoline content.

That portion of the gasoline vaporized in the early part of the travel through the coils is not liberated at once but carried on with the oil and subjected to added heat which tends to crack the vapors, he believes.

In his unit Mr. Granger submits raw crude to as much heat as possible through a series of interchangers and then flashes out the light fractions in a separate tower section, removing the vapors from the section into another part of the tower.

Vaporization is encouraged by maintaining a differential in pressure between the feed line and the flashing or separating chamber. The pressure differential is a powerful force in relieving the crude of its light fractions.

Raw crude for the pipe still unit is pumped by a Dean-Hill centrifugal charging pump through a series of two vapor line Griscom-Russell heat exchangers in the gasoline vapor line. From these two exchangers the crude passes to a reflux condenser mounted over the first of the two bubble towers. The crude then passes against hot fuel oil from the bottom of the tower before entering the flashing chamber.



Diagrammatic flow chart of pipe still unit at Barnsdall Refineries Inc., Okmulgee plant

As shown in the accompanying diagram the flashing chamber is at the top of the first column. It is closed from the remainder of the tower except for two 6 inch down spouts which carry vapor from the section downwards into a bubble section three trays down. Crude enters the flashing or expansion chamber under a pressure of about 8 pounds per square inch. It is expanded down to a pressure of 2 pounds.

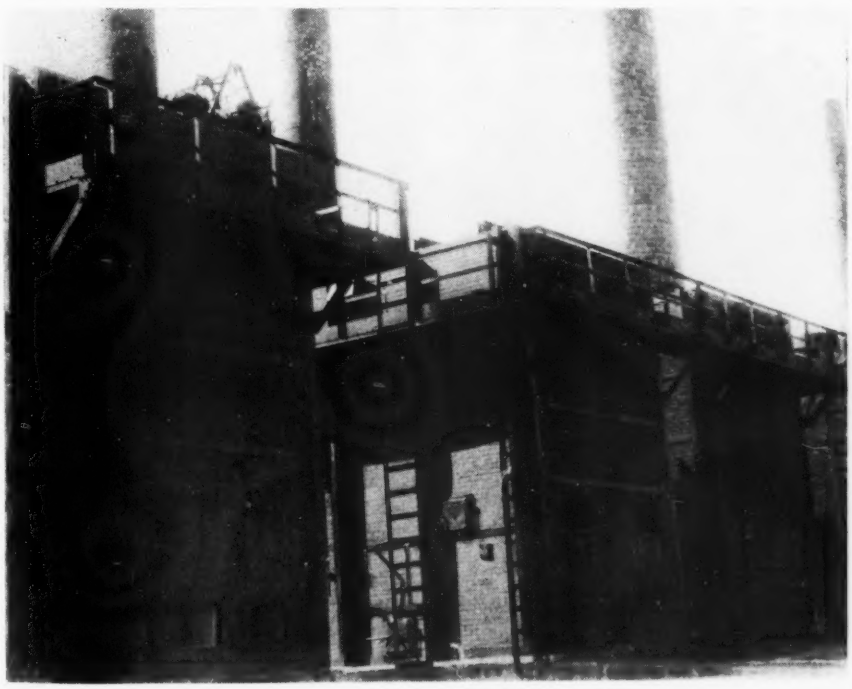
Reduced crude flows by gravity from this section into an accumulator tank equipped with a liquid level control, from which it is charged to the pipe still. Any vapors evolved in this accumulator tank are vented back into the tower. The liquid level control operates the charging pump handling raw crude to the unit. Reduced crude enters the pipe still at 400 to 410 degrees F.

Light vapors from the top tray of the first tower pass through the reflux condenser surmounting the tower and are charged into the second tower over about the seventh tray. Gas oil withdrawn from the third tray of the first column is pumped through a reboiler coil in the second tower and thence through a cooler to storage.

It is Mr. Granger's opinion that wet reflux should be used over the top of his towers and that the composition of the refluxing agent should be as nearly like the product being made as possible. To achieve this similarity of product he inserted a reflux leg similar to the ordinary water leg in the gasoline line just after the condenser box. From this reflux leg part of the current make of gasoline is pumped back over the top of the tower, the rate of flow being regulated automatically.

Control of fractionation in the column is based on the 90 per cent boiling point of the gasoline to be made. Temperature at the top of the tower is maintained about 50 degrees below the desired 90 per cent point. For example, at present the plant is producing a straight run gasoline with 90 per cent boiling at 390 degrees F. To maintain this distillation test the top of the tower is kept at 340 degrees F.

Kerosene is withdrawn from the bottom of the No. 2 tower, the outlet being extended down to a point below the reboiler coil through which hot gas oil is pumped. The tower is equipped with additional draw-off lines from various plates.



Front view of the pipe still battery at the Barnsdall Okmulgee refinery

Building a Refinery 10,000 Miles From Base of Materials

By L. D. Wyant

CONSTRUCTING an oil refinery in Comodoro Rivadavia, Argentina, 1000 miles south of Buenos Aires, presents many problems that would not be encountered in doing the same work in the United States.

The chief differences, however, are those of labor and materials. These naturally are to be expected. The climate of this part of Argentina is quite desirable, being dry, and never excessively hot nor extremely cold.

The chief climatic difficulty encountered is the wind, which sometimes blows continually for two or three weeks, day and night, making outside construction work almost impossible. During these wind storms all automobiles are driven with the tops down. It is not unusual that small rocks are driven through ordinary window glass, houses unroofed and things not tied down blown away.

The difficulty of labor is the most serious. The laboring class is comprised of men from practically every country of the eastern hemisphere. They know nothing of oil refinery construction or operation and it is very exceptional that one can find a man who has the ability to learn the work well enough to become dependable.

Since a large part of the men who are available are illiterate, finding a man who can learn his assigned tasks and who can write any language well enough to keep a record of his operations or read written instructions, really requires more than a lantern and the patience of Job.

The Latins seem to have no mechanical or processing instincts or intelligence. They do today exactly what they did yesterday—regardless. If the plant should blow up it is not their worry, although it may be their funeral. They refuse to be bothered. The German and Russian mechanics and plant operators prove most satisfactory, as they have the ability to understand cause and effect and readily grasp the mechanical principles used in machinery.

The difficulty of securing special equipment, repair parts, and so on, will be appreciated when it is understood that all equipment used in oil refining must come either from Europe or the United States. Probably 95 per cent of all oil refining equipment comes from the U. S. If repairs are needed they can be secured in about six months if ordered

Comodoro Rivadavia Produces 36,000 Barrels Daily

AFTER a three year and three months period of service in building and operating a refinery in the Argentine—broken by only one trip to the United States to buy equipment—L. D. Wyant, well known in the Mid-Continent refining and natural gasoline industry, has returned to Tulsa.

Mr. Wyant, who immediately prior to associating himself with the Railway Petroleum Co., Ltd., was a Bureau of Mines petroleum technologist, was retained in 1925 to go to Comodoro Rivadavia district. The Railway Petroleum is a company set up by the three largest railways in the Argentine to develop petroleum for railway fuel. Production having been found, the company went into the refining business.

The Comodoro Rivadavia field is now producing about 36,000 barrels daily, Mr. Wyant says.

Of this about two-thirds is produced by the Argentine Oilfields, the government controlled company. The rest is produced by the Railway Petroleum, the Anglo Persian Oil Co., Astra and Crown Petroleum Co. (Shell).

The latter's production is small at this time but it has the largest acreage of any non-government owned company and recent wildcatting points to development by the Shell of important reserves. Some of its newly proved territory, it appears, will produce oil of the highest gasoline content of any in the Comodoro field—16 per cent naphtha being reported—and the Shell company is arranging lines from its field to the coast and is planning a refinery in the vicinity of Buenos Aires.

There is now one refinery in the Comodoro Rivadavia district. It belongs to the Railways Petroleum and is the one that Mr. Wyant built.

The government produces some gasoline and kerosene in its dehydrating plant in this field, but ships its crude to the government refinery at La Plata, near Buenos Aires. This refinery has capacity of about 20,000 barrels and is running about 14,000 barrels. It has two Cross cracking units and more are being installed.

Glenn Martin, accountant for the Railway Petroleum Co., Wm. Hooper, construction foreman for the M. W. Kellog Co., and L. D. Wyant, refinery superintendent for the Railway Petroleum Co.'s plant at Comodoro. The picture was snapped after a hike to the top of Peak Sólomanaca

The refinery of the Railways Petroleum Co. has capacity of about 8,000 barrels per day, but as about 25 per cent water is taken from the crude, it will actually run about 6,000 barrels of oil daily.

The Argentine is right now producing about 20 per cent of its gasoline requirements, Mr. Wyant says. While the fuel oil production of the country is nearly adequate to present needs, this market will be greatly expanded for the country is experiencing a healthy growth industrially and has no coal.

Gas lift is being used to produce the more viscous oils. In the heavier oil territory of the Railway Petroleum, where oil ranged from 19 to 21 in gravity, gas is introduced into the oil column at about 600 pounds pressure direct from gas wells in the vicinity. The gas lift is thus reduced to its most elemental form.

Railway Petroleum has two gasoline plants in the field. One operates on casinghead gas, wells being produced under light vacuum, and the yield in this plant is about three gallons per thousand feet. The other plant treats the "dry" gas before it is used in the field and the refinery and removes about two-tenths of a gallon of gasoline per thousand.

by cable. This seems a very long time but it is the result of experience not theory.

All equipment sent to the Comodoro field is first sent to Buenos Aires and then trans-shipped by coast steamers. The time required for the transferring in Buenos Aires and the four-day trip south is, in general, about equivalent to the entire time required for loading and transit from Liverpool, Hamburg or New York to Buenos Aires.

The freight charges for this 1000-mile trip are slightly less than twice the charges from Liverpool or New York to Buenos Aires. This does not include any import tariff.

The people of Argentina do not believe in simplifying any operation that can be made complicated or in dispatching any matter that can be conveniently delayed.

Any experienced operator can see from the above the difficulties which must occasionally arise. The plant must be kept operating, hence it is necessary quite often to substitute ingenuity for spare parts, pumps, pipe lines, and so on, which in the United States would be purchased and installed as soon as the need becomes apparently a necessity.

This same condition applies to problems encountered in construction. Whenever the necessary equipment is not available other means less efficient, but equally effective, must be devised.

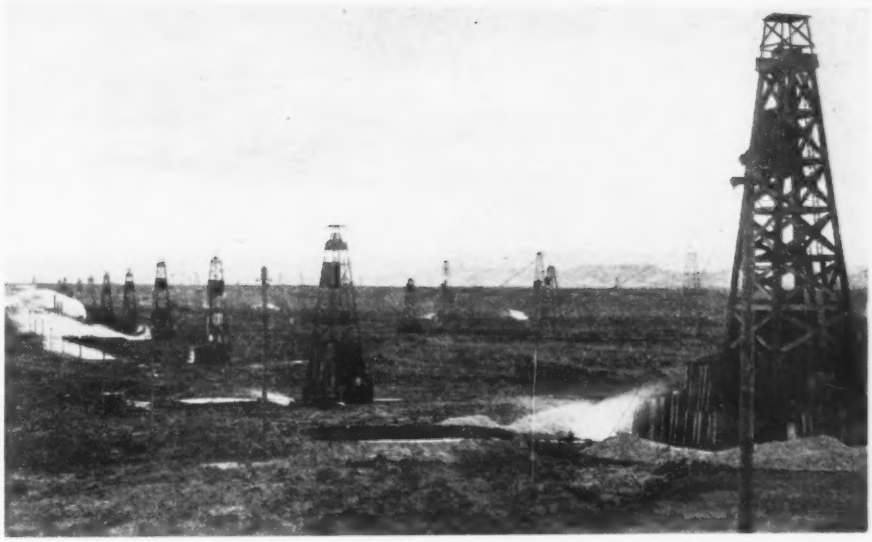
The ships unload at Comodoro in an open roadstead. Equipment for handling heavy pieces is not available. Heavy pieces are made water tight and floated ashore either by their own displacement or with the assistance of suitable barges or pontoons. This equipment is floated in as far as possible at high tide and dragged out at low tide with Holt tractors. The tide at Comodoro is quite convenient, having a difference from 25 to 30 feet.

Much of the evenness of climate at Comodoro is due to the ocean, which at all seasons of the year is extremely cold being 11° C. in the winter and 12° C. in the summer. The vicinity of Comodoro abounds in whales. Last year a whaling ship was operating using Comodoro as a base. At one time during the season 20 whales were washed ashore along the oil producing area. The problems of what to do with 1000 tons of decaying whale steak is not often presented as a part of an oil operation.

Fresh water is not available along the coast. In fact it was due to this that oil was first discovered. Fresh water is brought to the oil operations from the interior, the pipe lines being from 30 to 60 kilometers in length. The water thus made available is the best possible, being pure spring water, soft and especially desirable for boilers.

The oil produced at Comodoro is all shipped by tankers to the north and is all used in the Republic.

Living expenses at Comodoro are



The Kilometer 8 property of the Railway Petroleum Co., Comodoro Rivadavia field

Group of American oil field operators and wives celebrating July 4 with refreshments at Comodoro Rivadavia

This is not a snow scene in the Argentine oil fields. The white appearance of the valley is given by alkali soil and fine sand

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They know—by experience—that this mark is the sign of a valve in which they can place full faith.

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relatively high, as every article is imported. An ordinary evening dinner will quite likely have food products representing 12 or 14 countries. Comodoro and vicinity has perhaps 7000 to 8000 population. The predominating material used for all construction is galvanized corrugated sheet metal. Houses, fences, barns, store buildings and all else is constructed of this material called "Chapa." There are actually hundreds of tons of it in use, practically all of which comes from England.

Sports and entertainments in the Comodoro district are rather limited. The coast country has very little game, but the interior affords a hunter's paradise, particularly in the lake region to the west of Comodoro. Here one can find every kind of water fowl. Ducks, geese, swans and many other classes abound.

The principle field sport in the immediate vicinity of the oil fields is confined to hunting martinette and ostrich. The martinette is very similar in appearance to the domestic guinea hen; it furnishes rather difficult shooting and is quite desirable as food. The ostrich furnishes considerable sport for those who desire to risk their necks chasing them in cars. The ostrich holds the original patent on the single-track mind. If one ostrich crosses the road in front of a car the others have such a reverence for precedence that it never occurs to them to do otherwise. They set out immediately to head the car. The combination of bad or winding roads and the speed and persistence of the bird makes them usually the winner.

The lakes furnish excellent fishing but contain no so called game fish, but principally a very beautiful fish known locally as lake trout.

Wilson Welder & Metals Co., Hoboken, N. J., will exhibit in the welding section at the national metal exposition to be held at the Commercial Museum, Philadelphia, Oct. 8 to 12, its model S welding machines which combine many new and advanced operating features. The machines are Wilson type 200 amperes one-arc motor-driven unit, with welding range of 10 to 300 amperes, and the Wilson type 200 amperes one-arc gasoline-engine driven unit, with welding range of 10 to 300 amperes.

The Wilson welders are equipped with the new control panel. A new rotary switch, together with new design of field rheostat, afford good adjustments to the welding current. Machines are adapted to a heavy current and large diameter electrodes for rapid depositing of metal, and also to a short arc with close regulation of welding current for strength welding and repair work.

Wilson Color-tipt welding wire and welding accessories will also be on display.

New Patents

September 18, 1928

REFINING

Method of Treating Petroleum Products—Everett Raymond Wiles, Barnsdall, Okla. Filed Apr. 24, 1923. No. 1,684,426.

Counterflow Treatment of Petroleum Oils—Ralph A. Halloran, Berkeley, Calif., assignor to Standard Oil Company of California, San Francisco. Filed Dec. 19, 1923. No. 1,684,489.

Process of Treating and Fractionating Cracking-Plant Vapors—Eugene H. Leslie and Edwin M. Baker, Ann Arbor, Mich. Filed May 11, 1923. No. 1,684,771.

Process of Treating Slack Wax—Benjamin L. Souther, Pittsburgh, and William A. Gruse, Wilkinsburg, Pa., assignors to Gulf Refining Company, Pittsburgh, Pa. Filed Feb. 17, 1926. No. 1,685,008.

Dehydration and Distillation of Tars or Oils—Douglas Rider, London, England, assignor to Thermal Industrial and Chemical (T. I. C.) Research Company Limited, London, England. Filed Feb. 28, 1924. No. 1,685,034.

Process of Treating Slack Wax—Benjamin L. Souther, Pittsburgh, and William A. Gruse, Wilkinsburg, Pa., assignors to Gulf Refining Co., Pittsburgh, Pa. Filed Aug. 30, 1926. No. 1,685,058.

PRODUCTION

Mounting for Cutters of Rotary Well-Drilling Disk Bits—Walter T. Woods, Long Beach, Calif., assignor to U. S. Tool Company, Long Beach, Calif. Filed Oct. 24, 1927. No. 1,684,462.

Draw-Works Drum and Method of Locking the Drums and Flange Sections thereof—David S. Faulkner and Edward Timbs, Los Angeles, Calif., assignors to The National Supply Company of Delaware, New York, N. Y. Filed Oct. 19, 1927. No. 1,684,482.

Sealing Casing Head—William L. McLaine and Willard L. Borough, Los Angeles, Calif. Filed Jan. 12, 1924. No. 1,684,678.

Spider for Sucker Rods and the Like—Ernest J. Shaffer, Tulsa, Okla. Filed Aug. 28, 1926. No. 1,684,974.

Core-Drilling Head—Clement S. Clarke, Shreveport, La., assignor to Oil City Iron Works, Shreveport, La. Filed June 8, 1927. No. 1,685,045.

MISCELLANEOUS

Rotary Acetylene Torch—Frank J. Cullen, Culver City, Peter E. Binder, El Segundo, and Clarence C. Harshman, Los Angeles, Calif., assignors to Standard Oil Company of California, San Francisco, Calif. Filed Dec. 27, 1926. No. 1,684,476.

Liquid Fuel—Elmer H. Records, Spokane, Wash. Filed Jan. 6, 1925. No. 1,684,685.

Aqueous Liquid Fuel—Elmer H. Records, Spokane, Wash. Filed Jan. 6, 1925. No. 1,684,686.

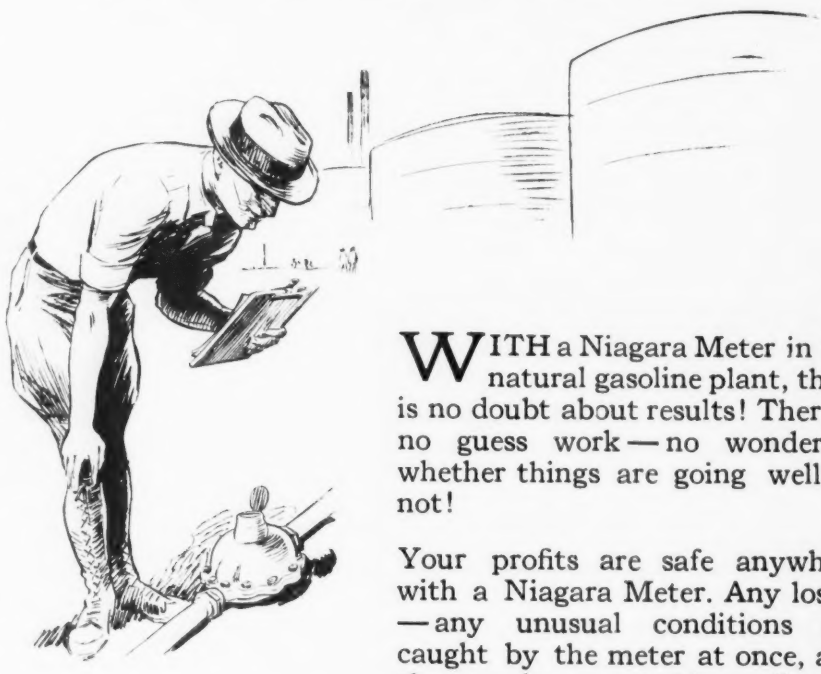
Apparatus for Dispensing Lubricating Oil—Henry R. Newman, Los Angeles, Calif., assignor to Boyle Manufacturing Company, Los Angeles, Calif. Filed Feb. 15, 1926. No. 1,684,879.

The Trimont Manufacturing Co. Inc., makers of TRIMO Pipe Wrench, announce the "Improved and Mightier" TRIMO. Although the contour of the frame has been slightly extended, the parts of the old and new wrench are interchangeable throughout.

An entirely new and scientifically developed method of heat treating gives to the handle greater strength and toughness. The swinging steel frame has been strengthened.

As a further safeguard, overlapping side lugs, an integral part of the handle, brace the frame effectively against lateral distortion or spreading. The design of these reinforcing lugs furnished a rugged safety feature without hampering the action of the frame or adding to the bulk of the wrench.

"That's Pretty Good! The Meter Shows that We Got 2900 Gallons of Natural Gasoline from the Last Million Cubic Feet of Gas!"



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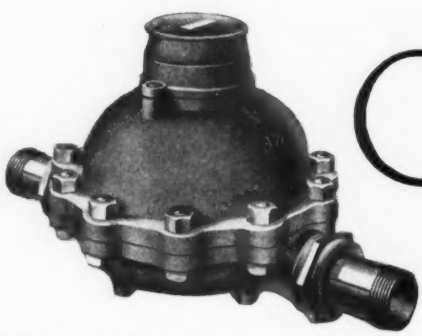

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Refinery Power Plant Delivers 1 Kilowatt Per 9.4 Pounds of Steam Per Hour

By A. E. Harnsberger*

THIS article is reprinted from the September issue of the Pure Oil News because it appears exceedingly interesting to the refiner. Mr. Harnsberger does not say whether any additional boilers were installed in order to increase the power capacity of this plant or whether there was enough steam that had been going direct to the boilers to accomplish the results desired when it was first passed through the stages of the turbines. His article follows:

Three years ago The Pure Oil Co. decided to modernize and increase the capacity of its Marcus Hook refinery. The program included the installation of three large tube stills for distillation and four of the 2000-barrel capacity Cross cracking units. Since a constant rate of oil flow on such equipment is essential for best results, the electric driven type of pumping machinery was decided upon. The construction program also included a new pumphouse, continuous treater and sweetener, a contact filtration plant and an addition to the water supply system, all of which were to use electric driven pumps.

At that time our power plant contained two steam engines of the 4-valve non-condensing type, one being a 300-kilowatt and the second a 500-kilowatt capacity machine. The increased load anticipated by the installation of new equipment made necessary that the capacity of the power plant be increased.

Many types of prime movers were studied, including the steam engine, diesel engine and steam turbine. Although the diesel engine transforms the largest per cent of available heat into useful work, it carries with it a high investment charge. In all oil refinery manufacturing lubricating oils there are numerous places where comparatively low pressure steam can be used to as good advantage as high pressure steam. This fact makes it possible for a bleeder or extraction type steam turbine to compete with any other known type of prime mover in economy and first cost.

The unit installed and at present in operation is a 1460-horsepower Kerr steam turbine, rotating at a speed of 3600 revolutions per minute, driving through a single reduction, herringbone type reduction gear a 1,000-kilowatt capacity Crocker-Wheeler 250 volt direct current generator. Auxiliary equipment consists of a Worthington 2240 square foot 3-pass surface condenser of the divided water box type, which permits operating one-half of the condenser while cleaning tubes of the other half. This is a very desirable feature since it permits the cleaning operation to be performed without shutting down the turbine. On account of the sediment in Delaware River water this cleaning operation is performed about once a month.

High vacuum is maintained on this condenser by means of a Worthington 2-stage steam jet air ejector. The efficiency of the condensing equipment is high since operating records show that in winter with cold circulating water, a vacuum of less than 1 inch absolute is maintained with ease.

The power plant is also equipped with a centrifugal circulating pump having a capacity of 1500 gallons per minute, and two condensate pumps, one steam driven and the other electric driven, each having a capacity of 50 gallons per minute.

Referring to the diagram shown, an idea may be obtained how the plant operates. Steam enters the turbine through the line indicated at a pressure that averages 145 pounds per square inch and 150 degrees of superheat. After passing through the first four stages of the turbine the pressure is reduced due to the expansion through the nozzles. At this point in the turbine there is a built-in grid valve which is automatically controlled by the steam pressure that is desired to maintain in the extracted steam line shown on the diagram. At present this pressure is maintained constant at 25 pounds gauge. That portion of the steam which does not pass out through the extracted steam connection continues past the grid valve and expands through the remaining eight stages of the turbine to the condenser vacuum, which averages 1½ inches absolute under ordinary circulating water temperature conditions. The steam having been condensed is removed by the condensate pump and delivered to the boiler feed water heater where it is again converted into high pressure steam.

On account of the great distance between the power house and the river, the cost of providing the condenser with the large quantity of water necessary would be quite high if it had to be pumped this distance. Fortunately, however, an arrangement was worked out utilizing the water that is provided for the two 100-ton, absorption type, refrigerating machines installed in the wax plant nearby. This water in its passage over the various cooling and condensing coils picks up only 5 degrees of temperature. It is, therefore, not so warm but that it can be delivered to the turbine condenser by the centrifugal circulating pump and used again for condensing steam.

Again, rather than discharge this water to the sewers, a line was laid to the lubricating oil stills where the warm water from the condenser discharge is ideally suited for condensing and cooling the wax and lubricating oil streams. Warm water is more desirable for this purpose than cold water on account of the fact that cold water is likely to congeal the wax in the coils and thus cause plugging. It will, therefore, be noted that the water is used three times; first, for refrigerating purposes; second, for condensing the turbine steam; and third, for condensing and cooling oil vapors. Reference to the diagram will give further explanation as to how this is carried out.

As above stated, steam is extracted from between the fourth and fifth stages of the turbine at 25 pounds pressure. This part of the steam in expanding to 25 pounds pressure from the initial 145 pounds has performed a considerable amount of work in the turbine and has served to place many additional kilowatts on the switchboard. In its passage through the first four stages it has lost only 80 B. t. u. per pound of its original heat, thereby making it almost as valuable for heating purposes as the high pressure steam generated in the boilers, when it is considered that the steam leaving the boilers has available a total of 1227 B. t. u. per pound for heating purposes. A very accurate record has been kept by use of flow meters of the quantity of high pressure steam that enters the turbine and the quantity of 25 pound steam that leaves through the extracted steam line. Over the year 1927 the average high pressure steam to the turbine totaled 10,876 pounds per hour, and the amount extracted averaged 7200

*Engineer, Pure Oil Co.

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pounds per hour. However, due to its passage through the turbine the extracted steam has lost some of its heat as mentioned, and is, therefore, equivalent to a reduced amount of high pressure steam in heating value. It should, therefore, be reduced by 6.7 per cent, or giving an average value of extracted steam in terms of high pressure steam as 6718 pounds. The quantity of steam chargeable to the turbine is the difference between this value and the total high pressure steam, or 4158 pounds per hour. The yearly average of the load was 442 kilowatt per hour, which means that the plant produced an average for the year of a kilowatt on 9.4 pounds of steam per hour. This is considered exceptionally economical performance.

Since only one man per shift is required for operation and the overhead and maintenance is not high, power is produced at a low cost. As mentioned above an average of 7200 pounds of steam is extracted hourly from the turbine at 25 pounds pressure. This steam is used for a variety of purposes around the refinery, the most important of which are indicated on the diagram. Part of it is used in connection with lubricating oil distillation in the shell still battery that is not far from the power house.

In winter time a considerable quantity is required to maintain oil temperature in storage tanks around the wax plant. These tanks contain such commodities as wax distillate, finished lubricating oils and fuel oil, all of which must be kept fairly warm in order to facilitate pumpage. Probably the largest part of extracted steam over a year's period goes to the ammonia generators of the two 100-ton Carbondale absorption type refrigerating plants. The consumption of these machines being fairly constant, is ideal for such a system. The new Sweetland filter contact plant also uses this steam to heat up the oil to proper contacting temperature. Another line out of the 25 pound system leads to the new office and laboratory where it is used for heating and other general purposes. Several other buildings receive their heat in the winter time out of the same system.

It will be noted that the average load is slightly less than half of the generator rating. However, the power plant is called upon to meet the very high demand that is occasioned when our tankers discharge their cargoes of crude oil, since at times it is necessary for two large pumps, each equipped with a 200-horsepower motor, to deliver crude oil to the Hance tank farm 4 miles distant. During these periods, which occur approximately every 10 days, the peak loads run up as high as 850 kilowatts. The load will also increase during this year somewhat on account of the installation of the new Sharples process that is at present under construction.

I See By the Paper - -

Automobile vs. Trolley—According to figures put out by the Chicago Surface Lines and the National Automobile Chamber of Commerce, the average Chicago resident pays about the same amount annually to ride street cars as he would spend for gasoline and oil if he drove an automobile the same distance.—Public Utility Bulletin, Sept. 17.

That Keokuk Refinery—Purchase by Cities Service Oil Co. of Osborne Oil Co., and other Illinois and Wisconsin jobbing units, lately acquired, ties in with the recently announced plan of Empire Oil & Refining Co. to build a pipe line to a point on the upper Mississippi river with a refinery at the northern terminus to serve its growing outlet in this section.—Chicago Journal of Commerce, Set. 21.

Louisiana Production Tax Holds—A federal district court in Louisiana has refused an application of Ohio Oil Co. for a restraining order against the enforcement of a tax on crude oil and natural gas. An appeal to U. S. Supreme Court is expected. The tax averages 4 cents a barrel on crude.—Chicago Journal of Commerce, Sept. 20.

League For Gasoline Tax—Earle R. Kelley, mayor of Elgin, Ill., addressing the Illinois Municipal League convened at Joliet this week, advocated a 3-cent gasoline tax. He suggests 1 cent for the state, 1 cent for the county and 1 cent for municipalities.—Chicago Herald-Examiner, Sept. 14.

Gasoline Tax Money—A judicial decision is expected early in September to say what will become of the funds, now tied up in the hands of the Illinois state treasurer, paid by oil companies as gasoline tax under a law ruled unconstitutional early in 1928. Either the oil companies will get it back to re-distribute to their customers or it will be applied to the roads according to the provisions of the defunct law.—The Oil Can, September.

Argentine Oil Monopoly Planned—Bill passes Argentine Chamber of Deputies authorizing executive department to nationalize all oil holdings in the country. Measure calls for expropriation of all privately owned and privately exploited lands. Monopoly would even extend to oil transport and sale of oil bearing products. Holdings of Standard, Royal Dutch, Anglo Persian and others in Argentina total about $100,000,000.—N. Y. World, Sept. 19. Bill authorizing nationalization of Argentine oil properties passed by Chamber of Deputies not likely to be acted upon by Senate at present session which ends Sept. 30.—N. Y. World, Sept. 20.

No Polish Monopoly—Polish Ministry of Industry and Commerce denies reports government intends to introduce monopoly for sale of oil and oil products and nationalization of pipe lines.—N. Y. World, Sept. 19.

World's Largest Tanker—Workman, Clark, Ltd., Belfast, receive order for what is to be world's largest oil tanker. Vessel will be more than 600 feet long and will have gross tonnage in excess of 18,000 tons. Owners or type of propulsion have not been announced.—N. J. Journal of Commerce, Sept. 17.

Spain's Three Refineries—Spanish Oil monopoly decides three large petroleum refineries should be established in Spain, one at Barcelona, one on northern coast, and one in southern Spain.—N. Y. Journal of Commerce, Sept. 19.

India Considers Gasoline Tax—A four-cent per gallon tax on gasoline in India has been recommended by a committee in a report submitted to the Indian government, in order to establish good roads.—U. S. Daily, Sept. 7.

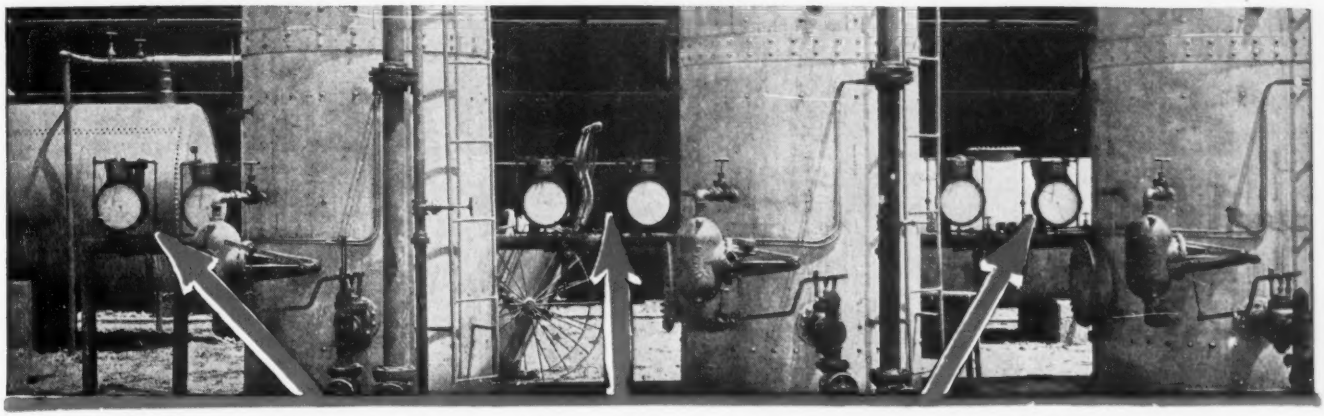
Mines Bureau to Film Gulf Plant—An educational motion picture, depicting refining processes, will be made by the U. S. Bureau of Mines in cooperation with the Gulf Refining Co., Pittsburgh.—U. S. Daily, Sept. 17.

Peru Asks Higher Gasoline Tax—An increase of 2 cents per gallon on gasoline in Peru proposed by the government. Present federal consumption tax is 1 cent per gallon.—U. S. Daily, Sept. 12.

New Oil Regulations for Colombia—New oil regulations which provide that all national land shall be exploited by semi-official companies, have been introduced in Congress by the Minister of Industries at Bogota, Colombia. The new measure is intended to substitute for the emergency law, the constitutionality of which has been challenged by the Supreme Court.

NEW YORK, Sept. 28.—Frederick G. Clapp, consulting geologist with headquarters here, has concluded a year's explorations in the Middle East and has returned to Paris.

METRIC orifice METERS



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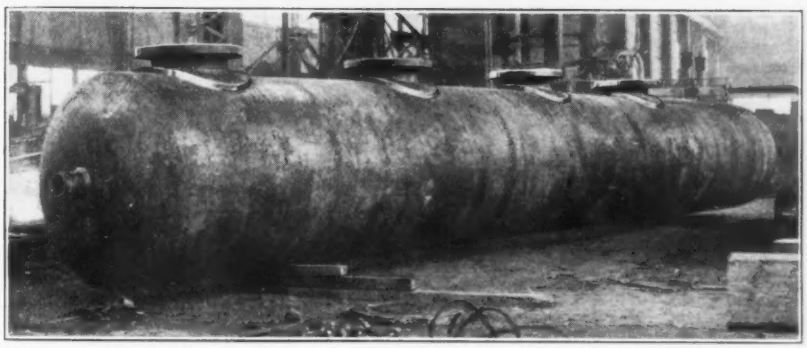

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Western Roads Seek Higher Rates

WASHINGTON, Sept. 28.—Western Trunk Line territory railroads Sept. 22 took the first step toward forcing the Interstate Commerce Commission to make a blanket increase in their freight rates. They are the railroads which served the country between Chicago and the Mississippi river on the east, the Rocky mountains on the west and the Missouri river line on the south.

They asked the commission to remove the technical barriers that make it impossible for them to file definite schedules setting forth the rates they think they should have. They want the barriers set aside so that they may file their schedules and have them suspended and investigated to determine their reasonableness. Such a procedure would require the commission to make some disposition of the question within seven months. Its power to hold new rates in suspension lasts for only seven months.

A net earning of only 2.97 per cent on their property investment in 1927 forces them to ask for higher rates, the assumption being that the public would still continue to ship by railroad, notwithstanding the higher rates and thereby bring about an increase in the gross and net revenue.

They asked the commission, two years ago to give them a five per cent increase but the commission, in effect, said, "No, wait until we have finished with our investigation under the Hoch-Smith resolution and perhaps out of that you will obtain more revenue. Besides the law says, in substance, that rates on agricultural products may not be raised." The Hoch-Smith resolution is still going on without any end in sight. The western roads are becoming almost desperate, hence their move to force action on the short suspension docket procedure.

The increase, probably 7.5 per cent, will be asked for on practically everything, which, of course, means petroleum and its products and coal.

U. S. Government Fleet Down to 5 Ships

WASHINGTON, Sept. 24. — The United States government's fleet of oil tank ships, which, at the end of the world war, numbered about 80, has within the week been reduced to five. That is to be the irreducible minimum.

This reduction came about through the sale by the Shipping Board of the tankers Darden, Gladysbe, Salina and Stockton for the aggregate sum of $1,156,860. The sale was in furtherance of the policy of taking the government out of the shipping busi-

ness by transfer of its ships to American business men.

The Clinchfield Navigation Co. bought the Darden and Gladysbe for $227,600 each and the Gladstone Transportation Co. bought the Salina for $352,000 and the Stockton for $349,000. The two first mentioned are of 7500 deadweight tons and the last two mentioned 9816 tons. The two first mentioned are at New York and the Salina and Stockton at San Francisco.

The five remaining tankers are to be retained by the Shipping Board for its own service which will continue until it has sold the rest of its ordinary ships. By that time, it is believed, the tankers will be ready for the scrap heap.

The gyroscopic method of geophysical prospecting was used by A. J. Feck in making a sub-surface survey of the Aguada hacienda, in the southern district of Mexico, for the Cortez Oil Corp., subsidiary of the Atlantic Refining Co., Philadelphia. The work was done by the McCollum Exploration Co., represented by Mr. Feck.

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Stabilized Profits in Oil Industry Best Serve Public's Needs

By John D. Gill*

Presented before National Petroleum Association, Atlantic City, Sept. 20

THE public does not, in the long run, benefit by prices for refined products which do not allow oil companies a fair return on their investment, John D. Gill, Atlantic Refining Co., Philadelphia, told the National Petroleum Association, in convention at Atlantic City, Sept. 20.

Stabilization of profits in the refining industry would allow the industry to plan its expansion program more wisely to take care of the growing demand for its products; to the end that it would continue to inaugurate betterments making for a plentiful supply of products at gradually lower prices, he said.

Mr. Gill presented figures showing, since 1921, the relation of value of refinery output to net worth of the oil industry. From 1913 to 1927 a group of companies representing in investment more than 40 per cent of the total industry, earned 9.38 per cent on their net worth. In 8 years prior to 1921 they earned 14 per cent; in the last seven years slightly more than 7 per cent.

Based on six months' rate of value of refinery production, profits for the industry would not be over 4.5 per cent for 1928, Mr. Gill pointed out. With advancing prices the last half of the year profits may average not far from 8 per cent on net worth, he said.

OVER the past decade the oil industry has contributed substantially to the improvement of the American standard of living if we may base such conclusion on the trend of wholesale prices of petroleum products. Since 1921 the average annual purchase value of the dollar has varied not as much as 5 per cent above or below the accepted base, the average of 1926. Hence, the trend of prices over this period is fairly well related to changes in our standard of living. If the buyer can purchase for 95 cents an essential commodity for which he formerly paid $1 he has presumably 5 cents with which to purchase either larger quantities of the same commodity or another commodity formerly not within his financial grasp.

Since 1921 the trend of wholesale prices of petroleum products collectively has been downward at the rate of approximately 5 per cent per annum. Products that cost 8.5 cents per gallon in 1921 cost about 6.5 cents in 1926 and less than 6.3 cents in 1927.

The price of certain products, notably gasoline, has declined to a much greater extent than the decline of the group. The average wholesale price of gasoline in 1921 was 17.1 cents per gallon, compared to 11.47 cents per gallon in 1926 and 7.99 cents per gallon in 1927, giving rise to a price trend downward at the rate of nearly 10 per cent per annum.

Each year the volume of products manufactured by the industry has been approximately 10 per cent greater than the volume of the year before; but the refinery value of the products has increased at a rate of only 5 per cent per annum. For gasoline, the annual increase in volume manufactured has been a little more than 13 per cent while the value of the gasoline production has each year been but a little more than 6 per cent greater than the year before.

The rewards to the oil industry for its postwar accomplishments have not been commensurate to the benefits it has provided. Whereas, in the 8 years prior to 1921 a group of companies whose investments probably represent more than 40 per cent of the total of the industry, earned profits of 14 per cent on their net worth, they earned but slightly more than 7 per cent in the last seven years.

Of the profits of this group prior to 1921 amounting to $1,895,000,000 only $703,000,000 or 37 per cent was paid in dividends; presumably, the other 63 per cent was returned to the business and has been instrumental in providing relatively cheap petroleum products. Since 1921 of the $2,123,000,000 profits earned by this group only $1,229,000,000 or 57 per cent has been paid in dividends. It is significant that with the lessened profits of the recent period a lessened proportion could be returned for improvements and expansion. In the 15-year period from 1913 to 1927 inclusive, this substantial group of companies earned on their net worth, 9.98 per cent of which less than 49 per cent was distributed as cash dividends.

What constitutes a reasonable return on investment is a moot question. Certainly, a question whose answer depends on the conditions under which the investments operate. For the oil industry the years 1919, 1925 and 1926, during which net earnings for the industry, as judged by the group, were 10.7 per cent 10.8 per cent and 10.1 per cent respectively on net worth, appear to be fairly normal or average years. Earnings in these years approximate the 15-year average of 9.98 per cent.

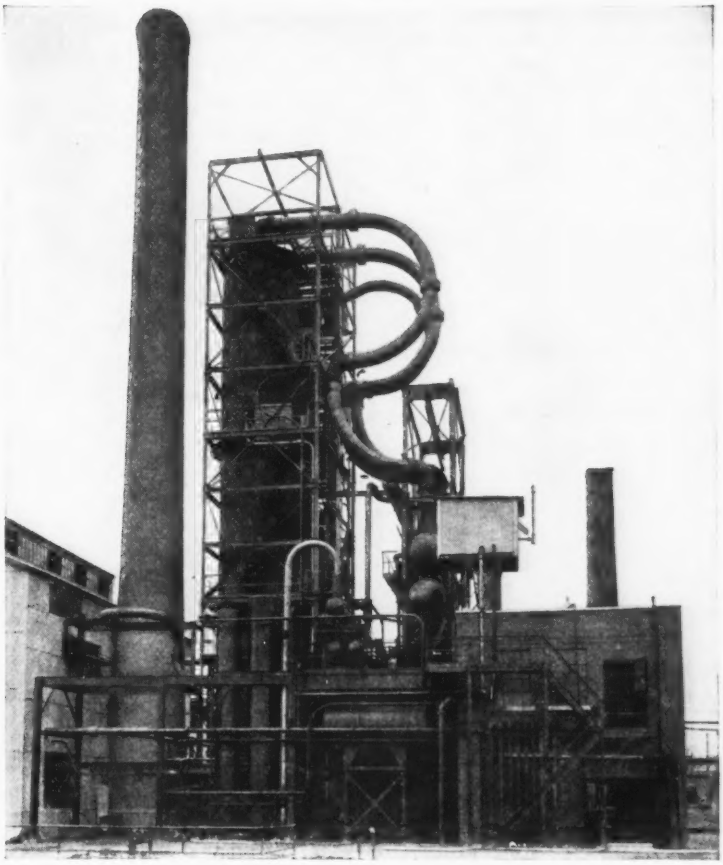
Prices throughout those years, particularly in the first and last named, were much more nearly stable than in other years; production, except of products in the latter part of 1926, tended to keep pace with demand.

During the last decade the net worth of the industry has increased at the average rate of nearly 5 per cent per annum. The net worth of $6,420,000,000 in 1919 had grown to about $11,000,000,000 in 1927. The

*Atlantic Refining Co.

N. P. A. Papers

TWO papers presented before the National Petroleum Association, at Atlantic City, Sept. 19-21, *are published herewith. John D. Gill's paper is on this page, and Norman M. Day's on page* 81. *Seven papers were published in the Sept.* 26 *issue beginning on page* 78, *and an account of the convention was published on page* 19.



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statistical relationships between the industry's net worth, net profits and refinery value of its products indicate that the average profit to the industry requires that the value of the products at refineries shall increase at the same rate as the net worth increases; that a return of 10 per cent on the net worth requires that the wholesale value of the products shall be approximately 25 per cent of the value of the net worth. Last year the refinery value of products was approximately $2,145,000,000 or about 19 per cent of the total net worth. The rate of return was correspondingly below the average and stood at 4.9 per cent.

Table I illustrates the relations between net worth, per cent return on net worth and refinery value of products for the last nine years, 1920 and 1922 excepted for lack of complete data.

It is obvious that the foregoing brief discussion omits many important considerations; for example the effects of inventory adjustments on profits; the effect on profits of the operations of the industry's activities beyond its refineries, notably marketing operations. But these considerations have been consistently omitted in each year of the period presented; and while their effect is not uniform, it is believed that variations in their effect will not greatly alter the relationships portrayed in column four of Table I.

What profits will be earned in 1928 is still problematical. At the first 6 months rate of values of refinery production the total for 1928 would approximate $2,165,000.000, a value slightly greater than that of 1927; but which when spread over the industry's increased investments would yield in all probability a lesser return, possibly about 4½ per cent. Fortunately for the treasuries of the industry, prices of products continued to advance after the mid-year, making possible the recovery of somewhat larger profits. Table II illustrates the situation.

In the first 8 months of 1928 the total value of refinery sales (practically equal to the value of refinery production at current prices) was $1,565,000,000. With normal production and sales expectations for the last four months of the year and assuming that prices would continue at their Sept. 13 level, additional gross income on refinery values to the extent of $885,000,000 would be realized; a total of $2,450,000,000. Should these conditions prevail the profits for the industry as a whole in 1928 would probably average not far from 8 per cent on net worth.

For profits of the magnitude of those earned in 1919, 1925 and 1926 the refinery value of production this year should approach $2,875,000,000. A return approximating 9 per cent would require a refinery value of production of $2,635,000,000. To what extent prices are below those necessary to realize this "below average" modest return in 1928 is illustrated in Table III, which shows a deficiency of $185,000,000 between the $2,635,000,000 needed and the $2,450,000,000 now in sight. Table III shows also the proportion of this deficiency which should be carried by each of the major products of refineries, and the product price deficiency in cents per gallon. That the public as well as the industry is harmed by insufficient profits to the industry is too long a story for the present discussion; but it may be mentioned that a degree of stabilization of profits would enable the industry to plan more wisely its expansion program to care for the growing needs of its public, to the end that it might continue to inaugurate betterments making for a plentiful supply of products at gradually lower prices. Last year's profits were so meager as to leave practically no funds available for return to the business after dividends had been paid by those companies which could pay them.

It has been suggested that the additional income necessary to provide a fair profit this year might come from increases in product prices as shown in Table III. There are, of course, other ways in which the profit requirements might be fulfilled. First of all, and always open for consideration, is the reduction of operating expenses. Much has been accomplished along this line, indeed so much in the last few years that by the "Law of Diminishing Returns" there is but little hope that any substantial part of the present apparent deficiency could be realized by additional reductions in operating expenses.

Indeed it must be evident to even the casual observer that the larger volumes of petroleum products consumed by the public at relatively lessened cost were made possible by reductions in operating expenses within the industry. Without price increases or cost reductions one other escape seems possible, namely, that at present prices and without proportionate increases in operating expense the volume of products distributed to the public, and hence their value, should be materially increased. Such an increase in gross income requires the industry to find larger markets at approximately present prices.

Table I—Factual Relations between Net Worth Per Cent Net Income to Net Worth and Value of Refinery Output

	(1) Net worth total* 1000 dollars	(2) % Net income on* net worth	(3) Value of refinery output 1000 dollars	(4) Ratio (3) to (1)
1928 (Per Table II)	$11,500,000	8.0†	$2,450,000	4.69†
1928 (6 months experience)	11,500,000	4.5†	1,088,000	5.32†
1927	11,000,000	4.9	2,145,000	5.12
1926	10,800,000	10.1	2,588,000	4.17
1925	9,650,000	10.8	2,377,000	4.06
1924	9,510,000	7.2	1,981,000	4.80
1923	9,150,000	5.6	1,794,000	5.1
1921	8,400,000	4.3	1,727,000	4.88
1919	6,420,000	10.7	1,633,000	3.93

†(Est.)
*Estimated on the group.

Table II—History and Outlook, Refinery Values, 1928

	First eight months Sales* 1000 Bbls.	First eight months Unit price Cts. per gal.	First eight months Value 1000 dollars	Last four months—9/13/28 Sales* 1000 Bbls.	Last four months—9/13/28 Unit price Cts. per gal.	Last four months—9/13/28 Value 1000 dollars
Gasoline	246,431	8.48	880,000	120,683	10.253	520,000
Kerosene	38,759	5.90	96,000	19,974	7.023	59,000
Gas and fuel	269,367	2.65	300,000	141,662	2.36	141,000
Lubricants	23,429	16.4	161,000	12,690	16.673	89,000
Wax (lbs.)	483,169	3.82	18,000	246,076	5.625	14,000
Group total			1,455,000			823,000
Grand total			1,565,000			885,000

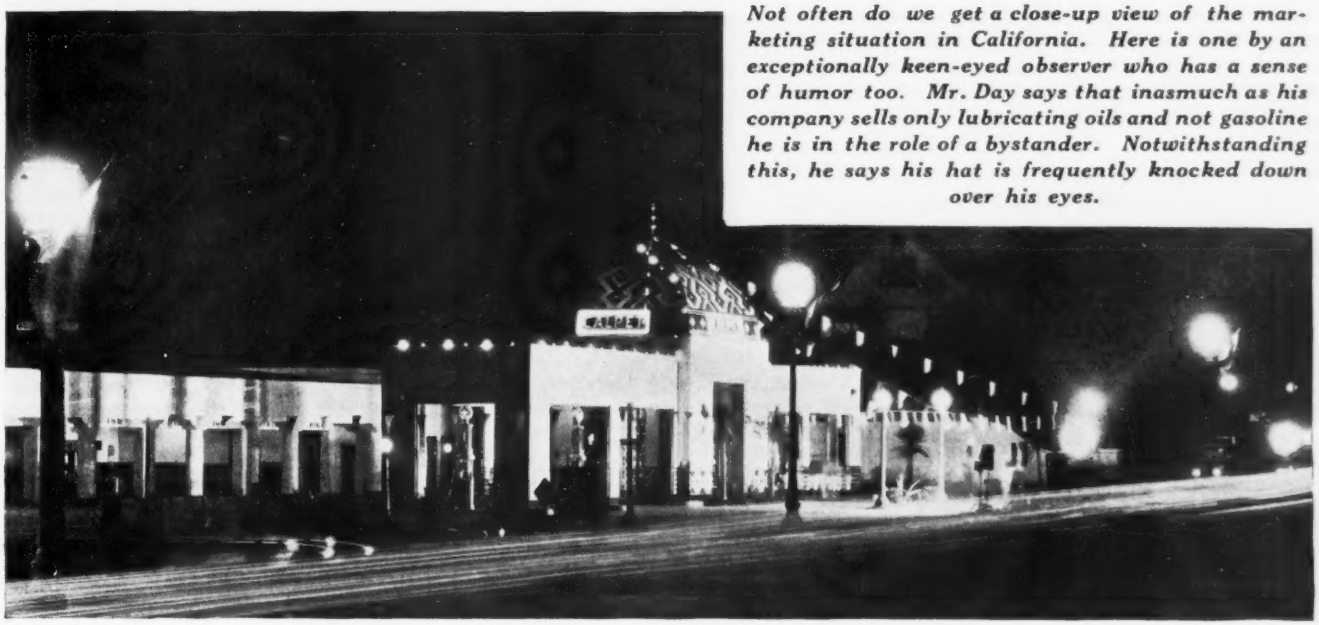
*Imports omitted.

Table III—Financial Outlook—1928

Refinery output values needed to produce 1919-1925-1926 profits			$2,875,000,000
Refinery output values needed to produce about 9%			2,635,000,000
Refinery output values first eight months		$1,565,000,000	
Refinery output values last four months		885,000,000	2,450,000,000
Refinery output values apparent deficiency (9% basis)			185,000,000

	Share of deficiency	Volume last four mos. 1000 barrels	Unit price increase needed cents per gallon
Gasoline	$106,500,000	120,683	2.10
Kerosene	15,700,000	19,974	1.87
Gas and fuel oil	40,700,000	141,662	.684
Lubricating	20,300,000	12,690	3.81
Wax (lbs.)	1,800,000	246,076	.732
	$185,000,000		

TULSA, Sept. 28.—The Pierce Petroleum Corp. has announced the appointment of I. R. Arrington as assistant manager of sales, with headquarters in Tulsa. Mr. Arrington for some time has been in charge of tank car sales in Tulsa. He will continue to handle the tank car business for the company in this territory.



Not often do we get a close-up view of the marketing situation in California. Here is one by an exceptionally keen-eyed observer who has a sense of humor too. Mr. Day says that inasmuch as his company sells only lubricating oils and not gasoline he is in the role of a bystander. Notwithstanding this, he says his hat is frequently knocked down over his eyes.

A night view of a California oil company owned complete service station

The Gallonage Battle in California

By Norman M. Day*

Presented before National Petroleum Association, Atlantic City, Sept. 20

IN PRESENTING a bird's-eye, or rather pump-nozzle, view of the California oil market, we must resort to a few statistics. We have boiled them down as far as possible and present them in round figures. California contains approximately 1,700,000 passenger cars and trucks, roughly one-thirteenth of the whole country's registration. Of this number, about 700,000, or 40 per cent, are contained in Los Angeles county. The whole of southern California contains about 60 per cent of the car registration and northern California 40 per cent. This concentration, together with year-round driving and the annual influx of motoring tourists from other states, makes the Los Angeles market a very large one, indeed. According to the most official figures obtainable, in 1927 the California market absorbed 1,017,000,000 gallons of gasoline, or 600 gallons per car and truck registered in the state.

At this point, it is interesting to compare the California market with that of a large eastern state. For this purpose, we have selected Pennsylvania—New York and Illinois gasoline consumption not being available. The California registration is 1,700,000, the Pennsylvania registration 1,550,000. California 1927 gasoline consumption was 1,017,000,000 gallons, Pennsylvania 691,000,000 gallons. California used 600 gallons per car and Pennsylvania 445 gallons per car. Though California's total consumption exceeded Pennsylvania's by 47 per cent, its consumption per car was only 35 per cent greater. This, despite the fact that outside tourist gallonage, which necessarily must be credited to the local registration, reputedly exceeds Pennsylvania's. This apparent inconsistency can probably be explained by California's considerably heavier consumption of gasoline in farm tractor work. We advance this theory, modestly refraining from remarking that California gasoline might pick up that extra 12 per cent in greater mileage per gallon.

IT IS also interesting to compare the seasonal fluctuation in gasoline consumption between the two states. Averaging the last two years' figures, we find that California uses 21.8 per cent of its year's consumption in the first quarter of the year; Pennsylvania 19.2 per cent; in the second quarter, California uses 25.9 per cent, Pennsylvania 25 per cent; in the third quarter, California uses 26.9 per cent, Pennsylvania 30.6 per cent; in the last quarter, California uses 25.4 per cent, Pennsylvania 25.2 per cent. Only in the third quarter do they vary substantially. Considering that California's roads are unobstructed the year round, with very little uncomfortable winter driving, Pennsylvania's closely paralleling quarter gasoline consumption is certainly a real tribute to the state highway department's efficiency in keeping its road open during the winter.

We estimate the total consumption of motor oil in California to be 22,000,000 gallons. This is based on an average consumption of 15 gallons per car, per year. Authorities vary widely in their opinions as to how much oil the average automobile will use. We can all remember the old days when a motor took a quart of oil with every five gallons of gasoline; 250 to 400 miles per gallon was considered pretty fair performance. Nowadays, motor cars are much more economical and many makes will run 1000 to 1500 miles without any apparent oil consumption. On the other hand, the regular crank case draining habit is growing steadily, which increases oil consumption. The chances are, that the average automobile runs somewhere between 600 and 700 miles per gallon of oil. At any rate, our guess is that from 20,000,000 to 22,000,000 gallons is about right for California.

THIS big market has not passed unnoticed. Judging from the daily battle we wage for our share of it, we incline to the opinion that it is in very competent hands. There are seven large refiners and marketers in the field, all of whom operate through their own stations, subleased or controlled stations, and the Independent dealer. Right along behind them come 10 smaller refiners and markets, whose major activities

*Pennzoil Co., of California.

are centered in southern California, right handy to their crude supply. They manage to make it quite interesting for the big fellows. Bringing up the procession, are numerous small jobbers, bitterly termed bootleggers, by the particular marketers whose trade they happen to be harrying at the time. This last group observe no ground rules. The Marquis of Queensbury, himself, would be hard pressed to write up a set of regulations covering their activities.

ALL these marketers vigorously push the sale of their own California lubricating oils and carry a side line of eastern oils as well, although the latter are kept pretty well in the background. Among marketers of lubricating oils, exclusively, there are three who specialize in pure Pennsylvania oil and back up their brands with strong advertising. A fourth national brand of Pennsylvania oil has entered the field this year and a fifth is about to follow suit. Two or three other fairly well-known Pennsylvania brands are marketed in California, but not aggressively. Just behind them come several local jobbers, marketing private brands. In addition to all these, a half dozen marketers of Mid-Continent oils operate in California with varied degrees of success. All in all, there are about 40 brands of oil on the California motorists' menu, most of them temptingly garnished in one way or another.

About 13,000 dealers stand ready in California to twirl the gasoline pump and ask the familiar question, "How's your oil?" These include motor car dealers, garages, repair shops, service stations, and from there all the way down to banana stands and hot dog emporiums, whose forelorn and weather beaten gasoline pumps stand as mute testimony to the one time optimism of some marketer who financed their purchase or as a monument to the high speed of an itinerant pump salesman.

We have never yet been able to determine the exact number of service stations in California. Listing company figures are inaccurate. Our own carefully compiled tabulations vary from those of other marketers with whom we compare them and, in turn, their figures vary among themselves. The final figures of any survey depend on how deeply the surveyor digs down into the banana stand class. In other words, what constitutes a service station?

Throwing all available estimates into one pot and boiling them down, we venture the statement that there are about 2000 company operated stations in California. This leaves about 6000 so-called Independent stations, of whom one-third are controlled in varying degrees by the big marketers. The remaining 4000 carry forward the banner of true independence. They appear to be holding their own, successfullly withstanding the encroachments of aggressive neighbors through their ability to make friends and keep them.

Undoubtedly, California has many more retail outlets for gasoline and lubricating oil than the market needs. Competition is, therefore, very keen and the daily strife for business leaves many wounded and slain combatants on the field of battle. This necessitates unusual organization on the part of the marketers' credit departments. Their ambulances and stretcher bearers may be daily seen working their way over the battlefield, ministering to the wounded and rifling the pockets of the dead. All California credit men, in the oil business, wear a worried haunted look. This provokes the same merriment among salesmen as is caused by watching a fat man slip on a banana peel.

California marketing methods are probably no better, or no worse, than those prevalent throughout the country. Undoubtedly, they are all much improved since the old days when kerosene lamps used to explode, because the seller was slipping a little too much gasoline into the kerosene.

DESPITE the great strides that have been made in constructive marketing there remain a few angles that have not yet been ironed out. Take "gasoline wars" for instance. Now, everybody knows that unlike washing machines, motor boats, silk shirts, and fancy colored portable typewriters, gasoline is not subject to sales stimulation. The 22,000,000 motor vehicles in the United States, use just so much gasoline today and their tomorrow's purchases will not be affected, regardless of whether their gasoline costs them 2 cents more or 2 cents less per gallon.

Yet, fully aware of this fixed volume in the gasoline business and with painful memories of past wounds not yet healed, a half dozen big marketers, at the drop of a hat, will jerk off their coats and tear into each other in a battle-royal. After the smoke of battle clears away, what have they gained? Generally, a host of fancy gasoline contracts with which to replace a like number of fairly profitable ones. As exclusive marketers of lubricating oils, our California company is not directly affected by these free-for-alls. However, for a friendly onlooker, we get shoved around a lot and maybe have our hat knocked down over our eyes. In spite of our friendly feelings for the contenders, we are peaceable by nature and sometimes we almost feel like hoping a cop will come along and run them all in.

Even if one of these marketers comes out of the fray with substantially increased gallonage, how long can he keep it intact? "That which is won by the sword must be maintained by the sword." Unless he is prepared to keep his price cutting sword loose in its scabbard, he can hardly hope to thwart reprisals and forays into his trade, on the part of his late and leaner adversaries.

An outgrowth of the ruthless competition for the other fellow's business is the 100 per cent service station, another fairly recent out-cropping in the gradual evolution of the oil industry. Either it is built or financed by the marketer, or else handsomely subsidized by him (very frequently with the red ink bottle handy). Its operator, the 100 per cent dealer, is forced to sell the marketer's products exclusively, or nearly so. Competitors operating along the same lines, and denied representation for their products in this controlled station, must necessarily start one of their own on the opposite corner, or half-way down the block. Within a very small radius there may often be found four or five costly service stations, all scrambling desperately for a volume of business that could very comfortably be handled by one or two, in which each of the five marketers might have representation for his product and receive his fair share of the business; the expression "fair share" being defined as that fraction of the total which would be commanded by the quality of his product, plus the advertising and merchandising he had put behind it.

But no, Mr. Marketer, impatient and chafing under the slowness with which his product is making its way in the field, hurriedly pulls out his pocketbook and buys his way in. If, instead of pursuing this policy, he would divert the extra money it now costs him, to intelligent and careful merchandising methods, he would by the end of a certain period of time, receive as much, if not more, business than he now commands on the "controlled" basis. He would make more profit and certainly his product would occupy a much stronger position in the market; a position almost impregnable against frontal attacks by price cutters. All intelligent marketers know this but too few of them are able to resist the impulse to turn aside from solid marketing principles whenever opportunity offers.

THE 100 per cent, or controlled, station policy is too costly and the results gained are too unstable. The principle is not sound and has been so proven a number of times in other lines of business. Various marketers in the drug business, tobacco business and grocery business, all older than the oil game, have proved to themselves that the public, working through the small dealer, knows what it wants and intends to have it, regardless of fragile barriers interposed by marketers seeking, by arbitrary tactics, to divert to themselves a greater share of business than the

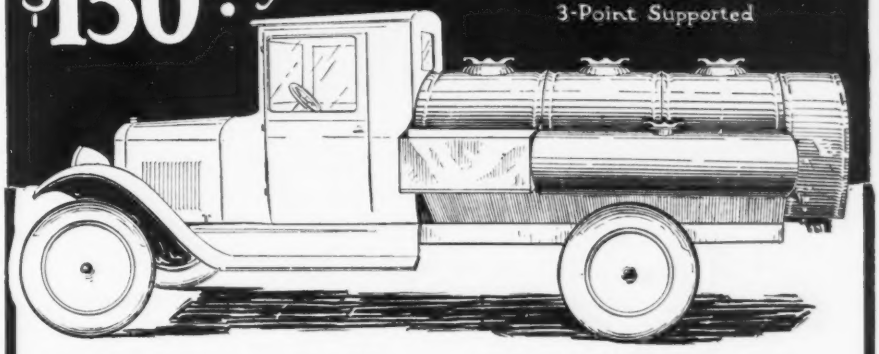
public intends they should have. Then why should not we, in the oil industry, turn aside from force as an important marketing device and, instead, use intelligent and constructive methods? We venture the prediction that the controlled outlet for gasoline and oil will prove to be but a passing, though costly, phase in the evolution of our industry.

A good place to start constructive work would be to educate the service station owner into better, more efficient ways of conducting his business. The automotive accessory industry took hold of this idea several years ago and has made real progress with it, among garages and repair shops. The movement has the financial support of manufacturers and jobbers, farsightedly interested in seeing their products more intelligently handled through their retail outlets.

A great many intelligent service station operators have worked out this problem for themselves and today are prosperous merchants who pay their bills promptly and treat with fairness both their customers and the marketers whose products they handle. There remain, however, thousands of service stations which are run on the basis of "if you don't like the fish, lady, throw it back on the wagon." Some of them don't belong in business at all and competition will eventually force them out. But the remainder, educated up to sound business methods, can furnish an ample outlet for our products.

ONE of the first problems to be met, in bringing up the general tone of the independent dealer, is that of substitution. It is difficult to say how prevalent is this pernicious practice. It is bad in California, in fact, throughout the West and, no doubt, prevails in other sections. Three years ago, realizing that something should be done about it, four California marketers prepared a bill that was passed by the state legislature. Boiled down, the terms of this law are simple: "Every tank from which lubricating oil is sold to the public must be labeled with the name of the brand of oil contained in the tank." Fair to the marketer, fair to the honest dealer, and fair to the motoring public, it would seem that this measure should receive the support of every broad gauged marketer. Yet, although they all received an opportunity to contribute their support to this legislation, when it was first proposed, only four did so. Not a single refiner and marketer of California oil took a hand. In fact, one of them tried to have the bill side-tracked on its way through the legislature. This particular concern is one of the leaders in the industry and the reason for its action, in this instance, is inscrutable. Certainly, it could not be that this mar-

$150.00 for this Convertible TRUCK TANK
3-Point Supported



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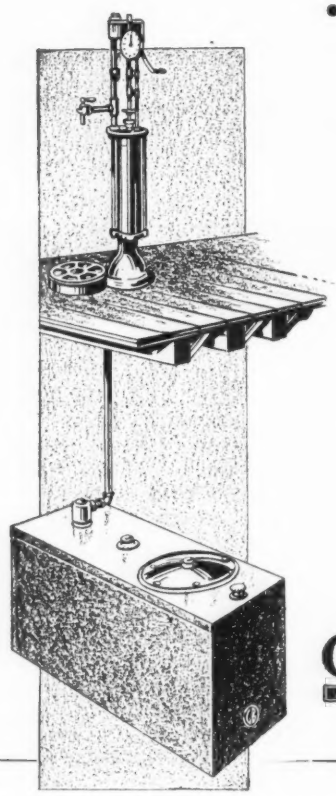

The G & B kerosene pump T-81K is neat enough to keep company with foodstuffs—it discards funnels and measuring cans—it's always dry and clean—it measures accurate gallons, half gallons and quarts without spilling or waste—and it's fed from a tank that is safely out-of-the-way. The T-81K is the ideal, well-built, inexpensive equipment for handling your kerosene. It gets dealers—and holds them. Bulletin T-81K describes it in detail.

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keter countenanced substitution?

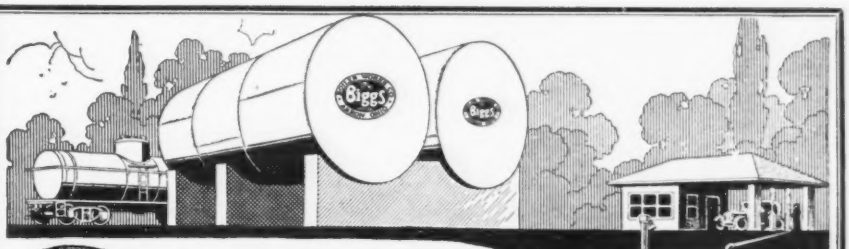
Among the less important, but nevertheless costly, practices which could be discontinued by improving the standing of the average dealer, is that of loaning oil tanks. We hesitate even to guess how much money oil marketers have invested at the present time in loaned equipment. This policy of loaning tanks outright originated somewhere in the east, probably in a large center where an eager newcomer in the field felt he wasn't getting ahead fast enough in securing a proper distribution for his oil. So he began handing them out. Naturally, his move was met by his competitors who felt called on to match tank for tank. The movement gradually spread and it has only lately reached the Pacific coast. Early this year, a prominent marketer decided that his western gallonage was not growing as rapidly as he thought it should, so he placed a couple of thousand tanks in the territory and loaned them to dealers who would stock his oil.

NATURALLY, competitive marketers decided they could not afford to lose gallonage, in wholesale lots, so they also began loaning tanks. Today the original introducer of the practice is back where he started, from the standpoint of gallonage, the only difference being that he now has a $100,000 investment in oil tanks on his books. The competitive marketers also have substantial investments which they bear as scars of this little fracas. Who has gained through the move? Certainly not the original marketer, nor, for that matter, any of his competitors who check-mated him; nor has it done the dealer any particular good. He just has a few more oil tanks that he didn't pay for and he is a little harder to deal with in everyday selling routine. He considers that he shook down the oil companies handsomely and quite naturally is looking for more plums. As a result of it all, not a single extra gallon of lubricating oil has been sold this year. Now, if the first mentioned impatient marketer had taken a small part of his $100,000 and, working through a selected group of dealers, had invested it in an educational program directed at the consumer—a program designed to increase the practice of regular crank case draining—he would have been doing constructive work. He might have convinced 10,000 motor car owners that it would be good business for them to change their crank case oil regularly every 1000 miles, instead of every 2000 or 3000 miles, or not at all. Also, he would have profited from the good-will of the dealers whom he helped secure this extra gallonage. Had the other marketers followed suit, they likewise would have profited and California oil marketers might easily have developed an extra million gallons of

annual oil sales, each securing a share proportional to the amount of time and effort he had put into the whole program. If all marketers would compete for the favor of the dealers and the public along constructive lines instead of taking these back-handed cracks at each other, the industry would forge ahead amazingly. The game would lose no interest. In fact, any salesman knows that the toughest competition to beat is that of a well established, alert, fair dealing marketer who is well regarded by the dealer. Conversely, the easiest competition to beat is that of a marketer who is established on the flimsy foundation of special prices, fancy deals and loaned equipment.

IN ORDER to save a little money, in putting through his expensive program, the tank-loaning marketer has dropped down to 30-gallon tanks in place of the old 60-gallon tanks. A 60-gallon tank can receive a barrel of oil before it is quite empty. A 30-gallon tank cannot receive even a 30-gallon drum, unless it is entirely empty. California exclusive oil marketers, in the past couple of years, have extended their truck delivery service until it pretty well covers the whole state. California is 1000 miles long and the policy of delivering oil throughout the state, while a sound one, is quite expensive. One would think that the dealer in appreciation of this service, would do his part by taking maximum deliveries; at least 50 gallons or else pay a differential for smaller deliveries. The California dealer did appreciate this service, on the part of the oil marketers, and was satisfied with the 50-gallon minimum delivery at the barrel price. Along came the 30-gallon tanks which allowed him to decrease his own investment and stock on hand.

Then some marketer, not caring for the tank investment idea, dropped his minimum barrel price quantity to 25 gallons. Another met it with a further reduction. At the present time, the dealer can purchase a number of brands, in 5 or 10-gallon lots, at the original barrel price. Obviously, this increases accounting costs and greatly increases the marketers' cost of delivery, because he is averaging only around 15-gallon deliveries, where formerly he averaged around 40. Who is responsible for this increase in the cost of marketable lubricating oil? Surely not the dealer! He used to be fairly happy when he had to pay a local expressman to bring him his oil by the barrel from the local railroad freight station and after receiving it had to get the oil into his storage tank as best he could. No, we cannot blame the dealer but must ourselves take the responsibility for these needless increases in our cost of doing business.



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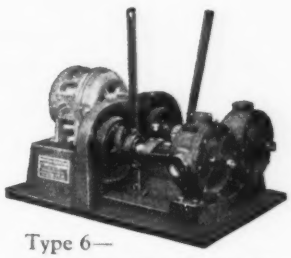

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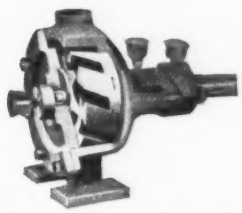

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Redistribution of Wealth by Taxation Is Modern Radicals' Aim

By Frank L. Packard*

"TAXATION is the most serious problem confronting the oil industry today", Frank L. Packard, attorney for the Standard Oil Co. of Indiana, was to tell marketers from Missouri, Kansas, Iowa and Nebraska, assembled in convention in Kansas City Oct. 3, 4 and 5.

This is not because of the specific amounts of state and local taxes on gasoline sales, service stations, bulk plants, tank wagons, pumps and other tangible property of oil companies, high though they may be when compared with other properties, said Mr. Packard.

The danger is in the definite effort of modern radicalism to control the power to tax and seek the redistribution of wealth through taxation for the benefit of the working classes.

This tendency to date has not been felt in this country as it has in Europe, only because of the high wage level here, Mr. Packard points out.

SINCE the World War, taxation has become one of the major problems of statesmen. The tax burden of the world has grown to such proportions that it threatens to absorb capital gains and leave business without incentive and capital for expansion.

Taxation appears to have become popular for the first time in history and the world seems to contemplate its staggering and ever-mounting burden with little alarm.

This phenomenon has caused such speculation on the part of economists and finance ministers, and the feeling is growing that it is due to a modern radicalism which seeks to redistribute wealth through taxation.

Up until the close of the Civil war the struggle between radical and conservative had to do very largely with political freedom. From that time until the outbreak of the World war the radical was little concerned with political freedom, but filled the world with much shouting about "economic justice," meaning by "economic justice" the redistribution of wealth through political action.

Since then we have heard little of economic justice and less about the malefactor of great wealth and the redistribution of his tainted money among the poor but deserving proletariat. The Utopias and communistic states have faded from the imaginations of the intelligentsia and there appears to be little objection to large-scale production and a reasonable return upon capital.

At the present time the great body of radicals throughout the world appear to be more concerned with wages, hours, working conditions, unemployment insurance, death benefits, old-age pensions, widows' pensions, and increased paternalistic activities on behalf of the laboring man than with the communistic state.

Has the leopard changed his spots? Has the dream of the radical for the last 150 years been interrupted by his sudden awakening and his reconciliation to the present distribution of wealth? Students of political history think not. He has only become (outside of Russia and the Third Internationale) wiser and saner and has changed his policy.

Many things have led to this. He finally realized that the redistribution of wealth instead of making everybody rich would make everybody poor and utterly demoralize the industrial world. He has witnessed the pretty thorough redistribution of wealth in Russia, and so far as he can observe no one appears to be the better for it, while there has been almost universal suffering as a result of the breakdown of industry and the falling off of production with resulting high prices and unemployment.

I think there can be little doubt that the progressive labor leader today desires primarily two things: first, the control of interest rates, and, hence, of price levels, and second, of the power to tax.

He would maintain production at a high state of efficiency and to this end would allow a return upon capital sufficient to produce at the maximum; he would maintain prices where the greatest benefit would accrue to both the producer and consumer and after allowing capital the minimum return consistent with the maximum of efficiency and production would distribute the remainder through taxation for the benefit of the working classes.

This modern radicalism has been quite generally accepted throughout Europe by conservatives as well as by the liberals and is not confined to the socialists and the communists.

For instance, last year Great Britain, now being governed by Tories and supposedly the most conservative nation on earth, distributed a billion dollars for relief of the poor, for suitable dwellings for working people, for workmen's life insurance, unemployment insurance, and old-age and widows' pensions.

The Germans, who are not noted for carelessness with money or reckless philanthropy, as far back as Bismarck's rule enacted socialistic legislation which has redistributed billions of dollars.

The same is true of every other nation in Europe and the amount of wealth which has thus effectively been redistributed reaches an enormous figure.

America has not yet been seriously affected by this modern radicalism. That it has not made greater progress in this country is due probably to the high level of wages, which is only another method of redistribution of wealth, quite as effective as the European method of taxation. However, as our raw materials disappear and the competition for business increases and wages and the hours of labor are affected, it seems certain that we will also adopt the European method of redistribution by taxation.

With the trend of thought obviously in this direction, taxation becomes of the greatest importance to business. We can leave to the realm of academic discussion the proper treatment of this movement from the ethical viewpoint of right or wrong.

The practical point I want to bring home to you as a group of business men is that now and in the years to come no feature of your business should receive more careful consideration than taxation.

It seems to me that a word of warning is timely. The oil industry presents the most unusual spectacle in the history of business: A whole industry submitting meekly to a tax in excess of the initial cost of its finished product: I refer to the gasoline tax.

You raised no outcry against its enactment; you falsely reasoned that it could be passed on to the consumer in its entirety. You remained silent in the face of repeated increases in the tax itself, ignoring the fact that this crushing burden on gasoline had become one of the greatest factors in bringing about the lean years through which you have just passed. What

*Attorney, the Standard Oil Co. of Indiana.

had the gasoline tax to do with these lean years?

Just this: It is an economic law from which no business can escape that with rising prices consumption decreases. Naturally, then, surplus increases and with resultant falling prices the surplus must move at the expense of profit.

To be specific, in your anxiety to move your stocks and meet your obligations you have depressed prices to a point where there is no room for both the tax and the profit, and since the tax must be paid profits have suffered.

That much is history, but the lesson remains. You are threatened with increases in the already high gasoline tax. The middle west is about a cent a gallon below the average of the rest of the country in the amount of this tax paid per gallon. There exists a general feeling among good roads enthusiasts, politicians and administrative officials that a 4 or 5-cent gasoline tax will not hurt the oil industry; that the tax ought to go to 5 cents per gallon and remain there as long as there is a section line road unpaved in the middle west.

The industry, optimistic and with courage undaunted, hopes for better prices for gasoline, but as the price mounts there will be decreased consumption.

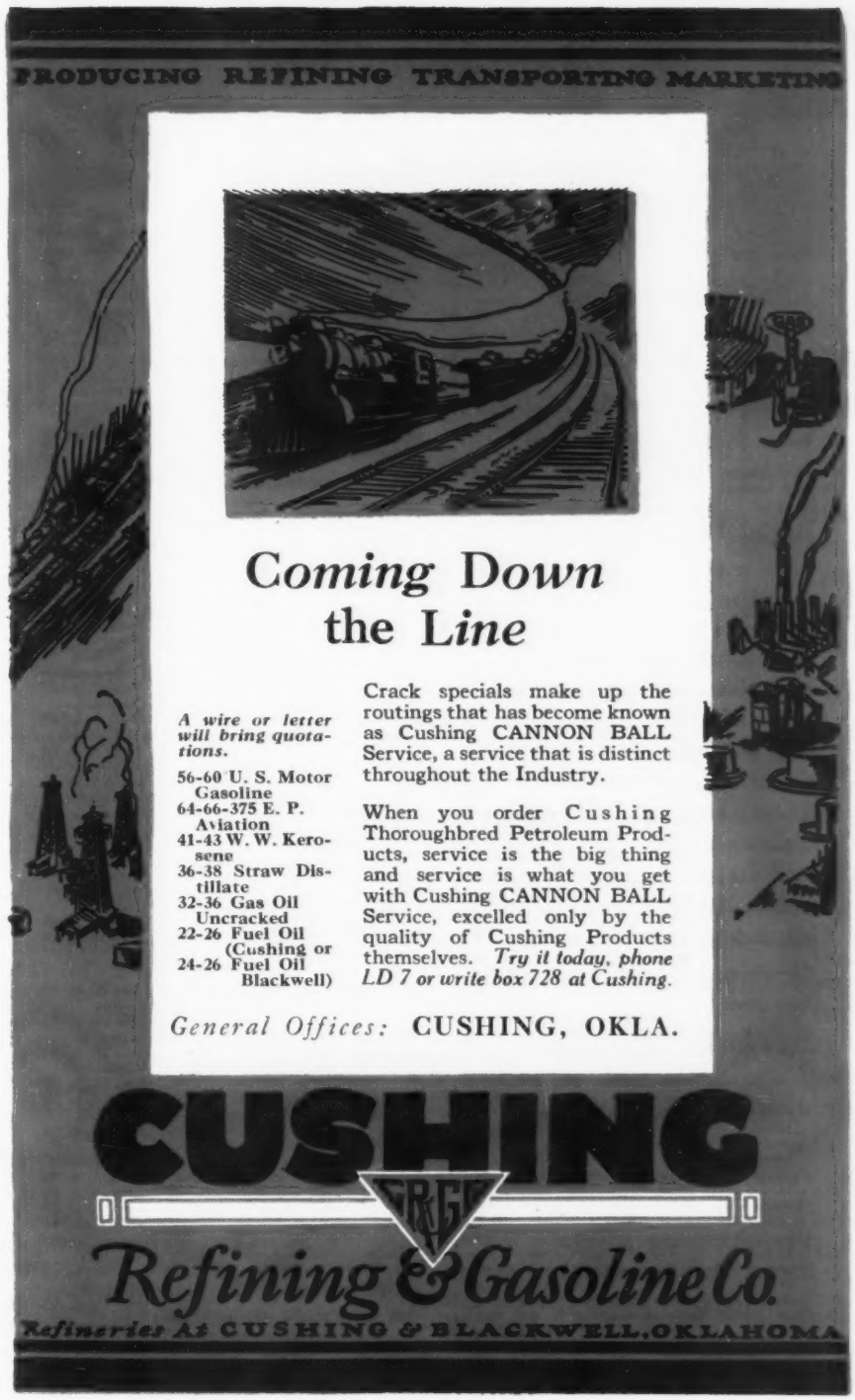
Obviously, more gasoline can be sold at 20 than at 25 cents a gallon, for there is a limit to the amount of money which can be spent for this commodity. As the price level advances the amount consumed will grow less.

It is a self-evident truth based on a fundamental law of economics that during the past year had there been no tax on gasoline a considerable portion of the $250,000,000 paid to the states in the form of these taxes would have been spent for gasoline. This would have consumed a major portion or all of your surplus stocks, and higher price levels would have obtained.

There seems no escape from the conclusion that a 4 or 5-cent gasoline tax is a most serious menace to the industry. At the inception of the tax it was no doubt generally felt that a moderate tax devoted entirely to the maintenance and building of roads would stimulate business by creating a greater demand for motor fuel.

The failure of the industry to resist its rapid increase, however, has encouraged officials seeking larger revenue to look upon it as a politically safe and economic method of securing revenues.

Emboldened by this passive attitude on the part of the industry, there is a clearly perceptible movement on foot to resort to this method of taxation for general purposes. Bills have been introduced into the legislatures in a number of states levying a gasoline tax for the maintenance of education, penal institutions, and for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Here are the 120 articles listed for your file reference:

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National Petroleum News
Main Office: 1213 West Third St.
Cleveland, Ohio

the general expense of the state and its political subdivisions.

In fact, we are moving rapidly in the direction of the use of this means of taxation for securing the major portion of the revenue needed for the maintenance of local government.

Municipalities are following the lead of the states and are levying excise taxes upon gasoline, service stations, bulk plants, tank wagons, pumps—in fact, upon all of the visible property of oil companies—for the maintenance of municipal activities.

It is incomprehensible but true that where these ordinances are proposed and passed there is seldom, if ever, heard the voice of an oil man in protest. The industry is not only burdened with these extraordinary state and local excise taxes, but it pays upon a high valuation under the general property tax laws in the several states and their political subdivisions.

New kinds of taxes are being invented year after year which cover the severance of petroleum from Mother Earth, oil rights, oil wells, and lubricants, until these pyramided taxes in themselves constitute a burden out of all proportion to that borne by other property, to say nothing of the gasoline taxes levied by the states.

If the federal tax on imports and on income and estates, plus the excises of the states and their political subdivisions, income and general property taxes, threaten business generally, what can be said of the oil industry, which, in addition to those burdens, bears these innumerable other taxes?

Candor compels the statement that there can be no more serious problem confronting the industry today than that of taxation and that this ought to have its most serious consideration; that ways and means ought to be devised for publicity and practical resistance ought to be developed to the enactment of laws placing heavier burdens; that earnest endeavor ought to be made to repeal many obnoxious laws on the statute books at the present time.

The Bennett Pumps Corp., Muskegon, Mich., is now in production on a new motor-oil dispensing pump which they claim is virtually everlasting due to the elimination of all gears and all non-metallic parts. They say the new pump is the first ever made after the fashion of the cylinder and piston construction of an internal combustion engine.

In this new pump, a 15-inch malleable iron lever replaces the conventional 8-inch to 10-inch crank usually employed. This lever operates a single-throw crank-shaft which in turn lifts and lowers a connecting rod to the upper end of which a piston-pin fastens a typical "auto-engine" piston equipped with a typical piston-ring. This piston-ring contacts precisely against the inner surface of a carefully polished cylinder.

Station Expense Trimmed To Meet New Q.D.A.

CHICAGO, Sept. 28

BUSINESS conditions for service stations throughout Standard Oil Co. of Indiana territory are going to change materially Oct. 1.

The maximum dealer's margin is about to shrink from 5 to 3 cents a gallon on gasoline.

Little enterprises that have sailed along nicely and cleared all snags in a 5-cent stage of water, may find themselves grounded when they try to navigate in the 3-cent level.

An interesting tale was told last week about how two business men, young but sensible, met the new order of things.

It is a partnership of two brothers, Robert & Jack (their last name does not matter), who are 27 and 24 years old, respectively. Bob is married and used to sell lube oils to the smokestack trade. Jack quit college, a sophomore, three years ago. At that time the two bought a filling station on a leased lot.

Both boys put all they had in it, about $750 apiece, and mortgaged it for all the traffic would bear. Then they went to work to make it pay.

The station did its part nobly and did pay itself out about five months ago. Now the firm of Robert & Jack own the business clear. The location is good; you might have guessed that already. Here is how things were going this summer:

They bought a new automobile lift, had it housed for winter service and agreed to put all their grease and motor oil profits in that until it was paid for. Gasoline and small odds and ends would have to carry the business with all overhead for a while.

The gasoline throughput has been 16,000 gallons a month on the average for the last year.

The 16,000 gallons on a 5-cent margin yielded $800 a month. Each brother took out a salary of $250 a month; rent on location was $100 and incidental items like electricity and laundering and occasional tips to racketeers ran $80. Total expense ran $680 and left $120 to put in reserve. But . . .

Under the new order of things 16,000 gallons on a 3-cent margin would yield only $480 which would leave them exactly $200 in the red for October with winter coming on.

Even though they believed the new price structure ultimately would improve their volume of business, they could not afford to lose $200 a month while they waited for the elimination of weaker competition in the neighborhood. So last Saturday night they held a business conference. Here is how it ended:

Bob, being a family man, can't live on less than $250 so he resigned his job, but he retained half ownership of the business. The station can't operate with less than two men so they agreed to hire a helper for $100 a month, a boy. Jack agreed to cut his own salary to $150 a month and try to get along on it. The station pay roll has been cut in half.

The certain $200 slump in income for October has been met with a $250 overthrow of expense.

Robert & Jack's service station will be open for business as usual through October and there will still be $50 to stick in the partnership's reserve account. Bob got a new job without a lot of trouble.

Educate Public, Attendants Is Lube Week Aim

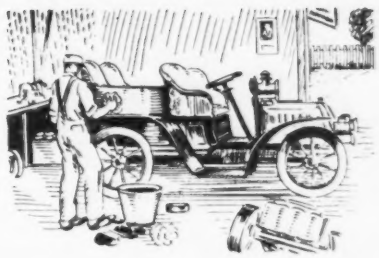
CLEVELAND, Sept. 28.—Two objects of Ohio Lubrication week—to make the public lubrication conscience and to educate station attendants in lubrication—were discussed at a luncheon meeting sponsored by the Ohio Petroleum Marketers Association in Cleveland, Sept. 21. Approximately 25 oil and equipment men in this territory attended.

To make the public lubrication conscience during the week Oct. 20 to 27 some large oil companies will concentrate for the next three weeks on lubrication in their Ohio advertising, W. A. Milne, executive secretary of the association, announced.

The pooling of newspaper advertising efforts of local clubs had been suggested but these clubs had indicated the desire to advertise as companies, it was announced. From 40 to 50 group meetings have been held the last few weeks to stimulate interest in Lubrication week.

Form and content of banners for stations and tank trucks and of pamphlets to distribute to customers were discussed. Individual stations may be decorated as desired.

Under the heading of station attendant education, it was announced that some of the larger companies were concentrating their educational efforts in Ohio at once. Lack of complete and suitable lubricating equipment at many stations in the state was pointed out.



..... 25 years ago water and a sponge would do!

BACK in the days of the side-winding horseless carriage a sponge and water did quite well for a wash job.

Today, the time factor demands a speedy wash. Today, the more frequent (sometimes almost constant) use of the car requires a weekly wash. Today, chromium-plating and highly-polished body finishes claim more attention and a wash that is gentle as well as thorough.

In short, the automobile generation of today will not be satisfied with a "sponge-and-water" job. Nothing less than a Globe Simplex Car Washer will do.

Let us send you our circular "Car Washing—Make it Pay You a Bigger Profit with the New GLOBE SIMPLEX HI-PRESSURE CAR WASHER". Sixteen points of superiority are carefully detailed.

Our complete new catalog featuring GLOBE Two-Stage and Single-Stage AIR COMPRESSORS, AIR TOWERS, PAINT SPRAY OUTFITS, FITTINGS, and ACCESSORIES gladly mailed at your request.

See us and our exhibit at the A. E. A. Show at Chicago this month

GLOBE MANUFACTURING COMPANY
56-66 Grant St., Battle Creek, Mich.

Canadian Sales Agent: Donald Dixon & Co., 21 King St., E. Toronto, Ontario, Canada

GLOBE
GARAGE & FILLING STATION EQUIPMENT

Cadillac Specifies Motor Oil on Basis Of Resistance to Distillation

CLEVELAND, Aug. 27

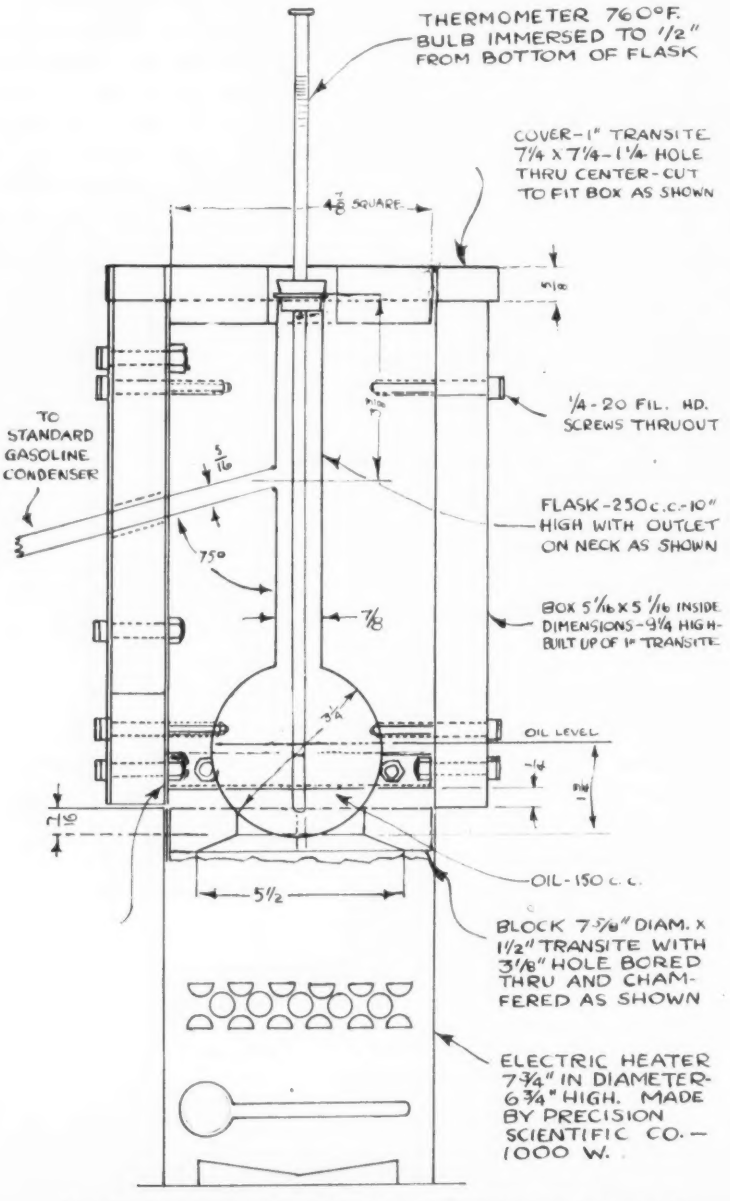
THE distillation test for motor oils which is used by the Cadillac Motor Car Co., Detroit, is similar in procedure to the Engler distillation method for gasoline. There are some variations in the equipment.

A standard 250 c.c. Engler flask is used instead of the 100 c.c. flask for gasoline. The shield is of 1-inch transite, a non-conductor of heat, instead of 22-gauge sheet metal. The heater is an electric unit, preferably of 1000-watt capacity, capable of bringing the first drop of distillate over in the specified time and continuing the distillation at a uniform rate.

The thermometer shall register at least 760 degrees F. The condenser is the same as used in the gasoline distillation. The graduate shall be an A.S.T.M. tapered type centrifuge tube as specified in A.S.T.M. D96-24 or a 100 c.c. straight graduate such as is specified for gasoline.

Cadillac's metallurgical department which has charge of motor oil tests, outlines the procedure as follows:

"(a) The condenser bath shall be filled with enough cold water to cover the condenser tube.


THERMOMETER 760°F. BULB IMMERSED TO 1/2" FROM BOTTOM OF FLASK
COVER-1" TRANSITE 7¼ X 7¼-1¼ HOLE THRU CENTER-CUT TO FIT BOX AS SHOWN
4⅞ SQUARE
¼-20 FIL. HD. SCREWS THRUOUT
TO STANDARD GASOLINE CONDENSER
5/16
75°
FLASK-250c.c.-10" HIGH WITH OUTLET ON NECK AS SHOWN
7/8
BOX 5 1/16 X 5 1/16 INSIDE DIMENSIONS-9¼ HIGH-BUILT UP OF 1" TRANSITE
3¼
OIL LEVEL
¼
1½
5½
OIL-150 c.c.
BLOCK 7-5/8" DIAM. X 1½" TRANSITE WITH 3⅛" HOLE BORED THRU AND CHAMFERED AS SHOWN
ELECTRIC HEATER 7¾" IN DIAMETER-6¾" HIGH. MADE BY PRECISION SCIENTIFIC CO.-1000 W.

Line drawing of set-up for making Cadillac distillation test for motor oil

"(b) The condenser tube shall be swabbed to remove any liquid remaining from the previous test. A piece of soft cloth attached to a string or copper wire may be used for this purpose.

"(c) One hundred fifty cubic centimeters of the oil shall be measured in a 200 cubic centimeter graduated cylinder allowing about 10 cubic centimeters for drainage, and transferred directly to the Engler flask. None of the oil shall be permitted to flow into the vapor tube. A-75 oils should be drained for 5 minutes and heavier oils, or bright stocks 10 minutes.

"(d) The thermometer provided with a cork shall be fitted tightly into the flask so that it will be in the middle of the neck and so that the bottom of the bulb of the thermometer shall be ½-inch from the bottom of the flask.

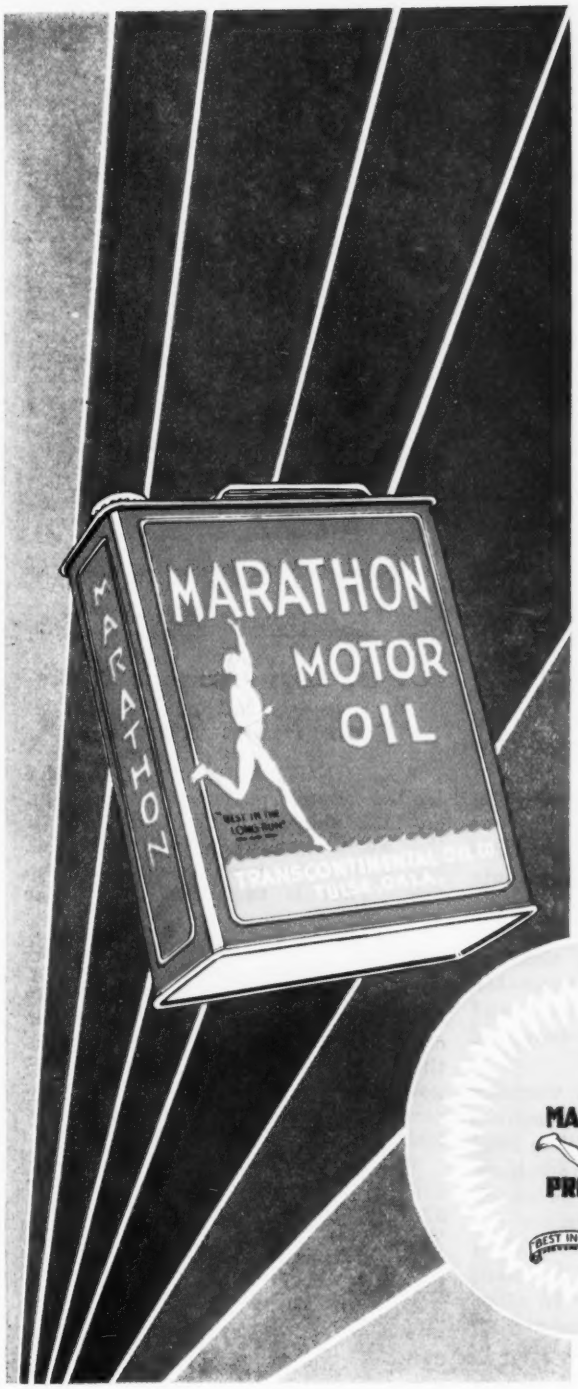
"(e) The interior of the shield shall be brought to a temperature of 600 degrees F. before flask is placed on heater.

"(f) The charged flask shall be placed in the shield and the vapor outlet tube inserted into the condenser tube. A tight connection is made by means of a cork through which the vapor tube passes. The position of the flask shall be so adjusted that the vapor tube extends into the condenser tube not less than 1 inch nor more than 2 inches.

"(g) The dry 100-cubic centimeter centrifuge tube used in measuring the distillate shall be placed at the outlet of the condenser tube in such a position that the condenser tube shall extend into the graduate at least 1 inch but not below the 100-cubic centimeter mark.

"Distillation.—When everything is assembled and in readiness heat shall be applied at a uniform rate so regulated that the first drop of distillate falls from the condenser tube in not less than 10 nor more than 20 minutes. When the first drop falls from the end of the condenser tube the reading of the distillation thermometer shall be recorded as the initial point. The receiving cylinder shall then be moved so that the end of the condenser tube shall touch the side of the cylinder. The heat shall then be so regulated that the distillation shall proceed at a uniform rate of not less than 9 degrees nor more than 11 degrees F. rise per minute. The reading on the receiving graduate shall be recorded at every 10 degrees rise.

"The heating shall be continued to



MARATHON MOTOR OIL

BEST IN THE LONG RUN

IT IS MADE FROM A HIGH GRADE PARAFFIN BASE CRUDE.

IT IS REFINED TO SUSTAIN AN UNBROKEN OIL FILM BETWEEN THE LUBRICATED PARTS OF A MOTOR UNDER CONDITIONS OF EXTREME SERVICE.

IT IS MADE IN SIX GRADES, ONE SUITABLE TO EVERY MAKE OF CAR. IT MEETS THE VISCOSITY SPECIFICATION OF THE SOCIETY OF AUTOMOTIVE ENGINEERS.

IT IS SUPPORTED IN SERVICE BY A COMPLETE ORGANIZATION.

TRANSCONTINENTAL OIL CO.

PRODUCERS—REFINERS AND MARKETERS OF MARATHON PETROLEUM PRODUCTS

General Offices: Ritz Bldg., TULSA, OKLAHOMA

Division Offices:
Atlanta, Chicago, Fort Worth, Oklahoma City, Little Rock, Sioux City

Refineries:
Boynton, Bristow, Fort Worth

Warehouses at convenient shipping points.

Products that Satisfy

Satisfied Customers are the life of your business— ***and there is nothing that satisfies like real quality, at the right price.***

Humble Products "repeat" because their quality is right. Each one of them—and there is one for each lubrication need—has been carefully designed and prepared, and thoroughly tested to see that it meets the most rigid requirements.

Our line is complete, and our refinery facilities are such that we can take care of your needs at all times — making prompt shipments, in any quantity you may desire—a carload or a shipload—by rail or water, to any point on the globe.

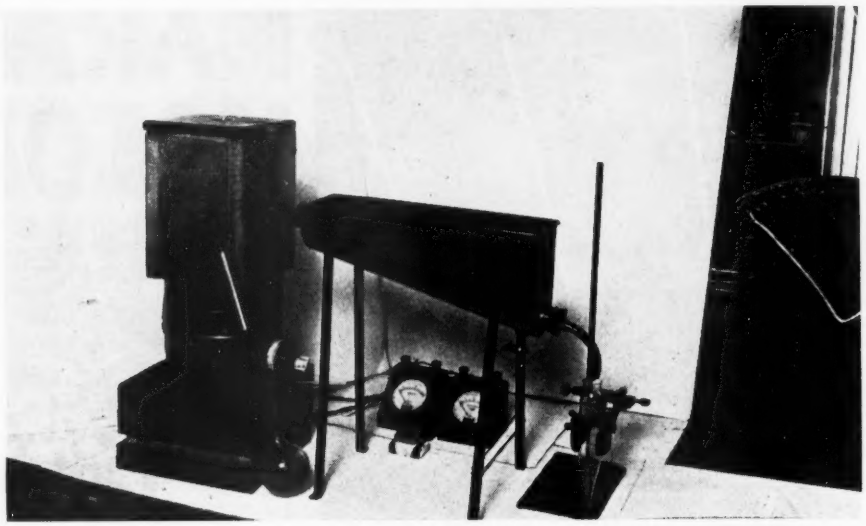
Wire or write for samples and prices.

HUMBLE OIL & REFINING CO. HUMBLE OILS HOUSTON, TEXAS

Reg. U. S. Pat. Off.

Humble Oil & Refining Co.

Houston, Texas
"Zero Cold Test Oils"
Producers—Pipe Lines
Refiners — Marketers



The distillation apparatus used for making tests of motor oil in the metallurgical department of Cadillac Motor Car Co.

the end point of the distillation or, in case the material is still distilling over when the mercury reaches 760 degrees F. the current shall be immediately turned off, the lid of the shield removed, and the condenser tube drained before the final reading is taken.

"The total volume of the distillate collected in the receiving graduate shall be recorded in percentage, as the distillate recovered.

"This test is intended to simulate the conditions which exist under the piston head, on the cylinder walls and in the main and crank bearings, where the oil is heated."

Cadillac, which specifies a viscosity of 75 Saybolt seconds at 210 degrees F. for motor oil for Cadillac and La Salle cars, places great emphasis on the distillation test. A motor oil can have a volume of distillate not to exceed 5 per cent. An oil with a distillate of more than 5 per cent is held to be unsatisfactory. In other words, at least 95 per cent of the oil must not evaporate at 760 degrees.

"We heat the oil to 760 degrees and let the system drain for about 5 minutes," said M. G. Walker, chief chemist. "Many oils may be heated to 760 degrees without a drop being distilled over."

WICHITA FALLS, Sept. 28.—A. A. Spencer, sales manager for the Exchange Petroleum Corporation here, is back at his desk after an absence of 5½ months. Mr. Spencer suffered an attack of influenza in April which with complications kept him in a hospital for a month and then for two months he was confined to his bed at his home. He has been spending the past two months with relatives in the Ozarks of Arkansas recuperating from his severe illness.

U. S. Government Sells Four More Tankers

WASHINGTON, Sept. 28.—The United States government's fleet of oil tank ships, which, at the end of the world war, numbered about 80, has within the week been reduced to five. That is to be the irreducible minimum.

This reduction came about through the sale by the Shipping Board of the tankers Darden, Gladysbe, Salina and Stockton for the aggregate sum of $1,156,860. The sale was in furtherance of the policy of taking the government out of the shipping business by transfer of its ships to American business men.

The Clinchfield Navigation Co. bought the Darden and Gladysbe for $227,600 each and the Gladstone Transportation Co. bought the Salina for $352,000 and the Stockton for $349,000. The two first mentioned are of 7500 deadweight tons and the last two mentioned 9816 tons. The two first mentioned are at New York and the Salina and Stockton at San Francisco.

The five remaining tankers are to be retained by the Shipping Board for its own service which will continue until it has sold the rest of its ordinary ships. By that time, it is believed, the tankers will be ready for the scrap heap.

TULSA, Sept. 27.—The Pierce Petroleum Corp. has announced the appointment of J. R. Arrington as assistant manager of sales, with headquarters in Tulsa. Mr. Arrington for some time has been in charge of tank car sales in Tulsa. He will continue to handle the tank car business for the company in this territory, and will do considerable buying for the company's retail stations in other territories.

Phillips in Tulsa As a Retailer

TULSA, Sept. 27.—Phillips Petroleum Co. is entering the Tulsa field as a distributor of gasoline and motor oils. The company has purchased the Casino, a Spanish type station at Fifteenth street and Cincinnati avenue on one of the main traveled streets to the best residence district of the city.

The company also is building one of its railroad siding stations at Second street and the Midland Valley tracks. This station is on the main street leading to the east part of the city. It will be of the standard English cottage type with underground storage for direct unloading from tank cars.

The Casino station will be opened on Sept. 29 with the usual offer that any customer filling his tank with Phillips 66 or Phillips Aviation may have 5 gallons free on his next call at the station. Phillips Petroleum Co. entered the distributing business with its special, high natural gasoline content motor fuels a year ago and now has several hundred outlets in the middle west.

New Gasoline Tax Bill For Pennsylvania?

HARRISBURG, Sept. 29.—Advance notices to work up enthusiasm for the first meeting of the Pennsylvania Independent Oil Men's Association were mailed during the week of Sept. 10 by R. A. Overholser, secretary, to oil marketers in the state. The convention, which will be held at the Penn-Harris Hotel here on Oct. 15, 16 and 17, promises to be one of exceptional interest to Pennsylvania marketers.

The three days' business sessions will be devoted to marketing problems entirely.

Two problems that will be discussed are the proposed new Pennsylvania gasoline tax bill and uniform accounting systems for oil marketing companies. Ways of training service station attendants, the fundamentals of lubrication and salesmanship, aviation and strengthening of the state's oil club organization, are other subjects in line for discussion.

An equipment exhibit will be included. Banquet and entertainment will round out the session.

Opens Chicago Office

TULSA, Sept. 28.—Dale W. Moore announces the opening of a Chicago office at 2701 Mather Tower, 75 East Wacker Drive. L. A. Stewart has been placed in charge of the office. General offices will be maintained in Tulsa as before with Mr. Moore in charge and Howard E. Felt as associate.

Better Gasoline Storage

PDM REDHEAD tanks with dished heads are directly adapted to storing gasoline.

PDM REDHEAD tanks meet all the requirements of the Underwriters' Laboratories and each tank is furnished with an Underwriters' label.

A full stock of PDM REDHEAD tanks is carried at our Pittsburgh shop and tanks of the capacities most commonly used are in stock in many cities in the eastern states.

Pittsburgh-Des Moines Steel Company

55 Neville Island, Pittsburgh, Pa. 659 Hudson Ter'l. Bldg., New York City

Atlanta Dallas Des Moines Chicago

A TIP ON TANKS

THERE may be a patented idea on "How to Stop a Leaking Underground Tank". If there is, we haven't heard of it. Naturally we wouldn't hear about such a method in regard to Youngstown Tanks. The best remedy — the remedy we firmly adhere to—is to stop leaks before they start. Our method of building tanks has for years proven this theory.

When you bury a Youngstown Tank, you need never dig it up, either to repair a leak or to show a prospective tank buyer what a perfect tank looks like. Our bulletin No. 15 takes care of all the details. Write for it.

THE YOUNGSTOWN BOILER & TANK CO.

YOUNGSTOWN, OHIO

Offices in Principal Cities

Youngstown TANKS "KEENE STANDARDIZED MADE"

CHAMPLIN OILS

BUSINESS BUILDERS

Mr. Jobber: Are you looking for a line of motor and tractor oils that will give 100% **SATISFACTION** to you and your customers? If so, we earnestly invite a trial of **CHAMPLIN** Oils.

CHAMPLIN Oils have a remarkable record to their credit. Their supreme quality has played an important part in achieving the present nation-wide prestige of the **CHAMPLIN** business. In a brief period of years they have not only won customers for us throughout the country, but more important—they have *HELD* those customers, and have unfailingly built business for them, steadily and rapidly.

These results are not accidental. Throughout their history **CHAMPLIN** Oils have been refined exclusively from the choicest paraffin-base Mid-Continent crude, and **CHAMPLIN** refining methods have been thorough and scientific in the extreme. **CHAMPLIN** standards of quality have come to be recognized universally as the highest. **CHAMPLIN** *does* offer oils of very exceptional purity and stamina. We invite you to put this statement to the test.

"CHAMPLIN Oils Have Always Been Good—ALL-WAYS"

USE CHAMPLIN OILS

CHAMPLIN REFINING COMPANY ~ *Enid, Okla.*

The Editors' Viewpoint

National Petroleum News

Inaccurate Reporting

CARELESS and utterly incompetent newspaper reporting does the oil industry more harm than is generally realized.

On the occasion of the National Petroleum Association meeting at Atlantic City only a few days ago a newspaper report in the Philadelphia Public Ledger, among other papers, credited Fayette B. Dow, general counsel of the association, with the following quotation:

"Unduly large production and wasteful methods of operation in the oil industry have created a situation so alarming as to jeopardize the public's safety and the oil industry's welfare."

Some oil men, even today, will recall that remark as being in a letter written nearly four years ago by President Coolidge to the four Cabinet members who formed the Federal Oil Conservation Board.

Mr. Dow quoted the remark, as coming from President Coolidge, in his address before the refiners at Atlantic City to show the attitude of the government towards the oil industry four years ago. The entire theme of Mr. Dow's remarks was the change in the attitude of government towards the industry today.

However, not one newspaper reader out of a hundred will know this. Each one who read the newspaper article in question will carry only the false impression of an official of one of the national oil associations decrying alarming waste in his own industry.—V. B. G.

Cutting His Own Throat

THE oil jobber who resells at wholesale and at a cut price, the surplus gasoline that he can order in on his contract with the refiners and under his long protective margin is hurting not only himself but the oil industry. He is aiding materially in continuing the cut prices of which he has long been complaining.

And the refiner, who lets any of his jobber customers get away with it, is just cutting his own throat.

This is a development that has come into the tank car market in the past few weeks since the tank car price of gasoline F.O.B. Group 3 Oklahoma has been high enough to shrink the jobbers margin on it to an unprofitable degree.

Few jobbers are doing this price cutting, re-peddling, but those who are, are causing enough trouble to warrant the condemnation of the industry. The practice is quite noticeable in Ohio. Some jobbers have rounded up even enough of their material to make it possible for a broker or two to offer it on the open market, and of course the broker, in cutting the Group 3 price does not bother to inform the trade how he is getting the goods. He lets it be known that a "legitimate Oklahoma refiner" is letting him have it.

The jobber thus taking advantage of a wide marginal contract is emphasizing as much as he can, one weakness in such contracts and will only tend to make the refiners that much more cautious in making contracts in the future and, if possible, at a less margin.

A protective margin in a contract is made for the sole purpose of taking care of the reputable jobbers who have so conducted their relationships with the refiners as to warrant special consideration. They are those who by their fair dealing have developed good gallonage, paid their bills promptly, not made unfair claims of "off specifications" or "outage" to the refiners and have otherwise indulged in that give and take which is the commendable feature of all honorable business men.

The lesson the refiners can draw from the present abuse of their marginal contracts is to be much more careful in the future with whom they make such contracts. That would be only fair to that host of jobbers who have played square with the refiners. They are entitled to all the protection that the refiner can give against the jobber who has conducted his business unfairly and unsoundly.—W. C. P.

Exposition Works On Business Basis

THE Petroleum Exposition, which will be held this year in October in Tulsa should be a success, more so, if anything, than in previous years, judging from the way the job of organizing it is being done.

Those of us "remote control" directors—we who live at a distance from Tulsa and have not been able to attend any of the directors meetings—have been impressed with a number of things in regard to this exposition.

First, we can't help but view with respect that there have actually been directors meetings called and held, even though we distant ones could not attend. Second, we get regularly and promptly complete minutes of those meetings, plus—and this is most important—a weekly report from the managing director, Burr Gibbons, on what he and the other officers are doing.

From these reports which are on a plain dollars-and-cents basis, we can see that the exposition is going ahead, that it is signing up more exhibitors every week, that it is taking in the necessary down payments for exhibit space, that the treasury has cash in it, that the bills are being paid, that new features of a sane variety are being added to the exposition from time to time—in short that the whole show is being run in a common sense, business-like way.

The exposition is being conducted on a budget basis, the budget being conservatively figured against the receipts so that the treasury will come out ahead when it is over.

All this is due to the management, which is W. G. Skelley, his executive committee, at Tulsa, and the manager Mr. Gibbons.

This Petroleum Exposition may well be placed on the same plane as a university. Its chief value is to the oil industry at large in the education that it affords to oil men of all degrees in the inspiration it gives to every one, oil man and oil equipment man, yes even the oil publishers.

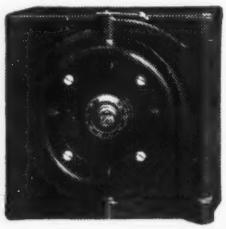
So every oil man should make it a point to "go to school" at Tulsa from October 20 to 29, the period of the Petroleum Exposition.—W. C. P.

Another Filling Station Raided!

A SHORT "joy ride" from a nearby city—a quick attack upon your filling station, and the thieves return to their haunts well supplied with cash.

Only the best protection obtainable—the York Round Door Chest—is good enough to resist the stubborn attacks of these cracksmen.

Follow the lead of the largest chains of filling stations—install York Round Door Chests.



YORK SAFES

YORK SAFE and LOCK COMPANY
YORK, PA.

Veribrite
SIGNS
CHICAGO
PORCELAIN ENAMELED
IRON SIGNS

SINCLAIR H-C GASOLINE

This Veribrite sign helps Sinclair dealers to more gallonage and greater profits.

If the finest sign is none too good for *your* dealers—

Write for Illustrated Booklet

Veribrite Signs - Chicago

Division of GENERAL PORCELAIN ENAMELING & MFG. CO.
4105 Parker Ave., Chicago, Ill.

New York State is Last Fastness Of Auto Club Discount Scheme

CLEVELAND, Sept. 28

NEW YORK state appears to be the last stronghold of the automobile clubs that would have oil companies finance their memberships. Discounts of 2 and 3 cents a gallon have been given this year by oil companies to automobile club members in New York, Buffalo, Utica, Schenectady and possibly in other cities.

The scheme used in Buffalo is typical of how the oil companies are used to finance memberships. The Automobile Club of Buffalo has contracted with the Hygrade Oil & Fuel Corp., Shell gasoline distributor, to give the club's members, which include about 20,000 of the 122,000 automobile owners of Buffalo, 3 cents off the posted price of gasoline.

Each club member was supplied with a coupon book on the cover of which was printed "SAVE YOUR MEMBERSHIP DUES." The books contained $15 of coupons, each coupon having a value of 3, 6, 9, 12 or 15 cents to accommodate any sized purchase of the club member.

Purchases were worked this way: Assuming the service station price was 20 cents and the member bought five gallons of gasoline, he would pay the station salesman 85 cents cash and give him a 15-cent coupon. In other words the club member would give paper for 3 cents on each gallon and cash only for the remainder.

Each member received a printed list of Shell stations in Buffalo and Niagara Falls. The list was grouped into stations of a general locality so a motorist who might be driving in a neighborhood with which he was not intimately acquainted could look at the slip for the group of stations in that neighborhood and find one located nearby.

Each book covered 500 gallons of gasoline, probably less than the volume used by the average member in a year. Members did not have to ask for the book; they virtually were shoved at them. Reads a circular of the Buffalo club:

"Upon checking our records we find that you are among those who have not had an opportunity to come to the Club Office and receive, FREE of charge, your book of coupons which will effect a saving of $15 for you on your purchases of Shell gasoline, as stated in our circular announcement mailed to the entire membership last December.

"As many of our members are making profitable use of this newest membership benefit, we are enclosing your Gasoline Coupon Book with this letter, together with a list of stations where, with the use of the coupons, you may purchase Shell gasoline at the tank wagon price, which at the present time is 3 cents a gallon less than the retail price. Enclosed with the Coupon Book you will also find concise explanation of how to use the coupons when making your purchases.

"By signing your name and address in space for that purpose on the outside of the back cover, your Gasoline Coupon Book is ready for immediate use. The 'VOID' date on front cover is the date of expiration of your membership card. Renew your membership promptly, return the book with unused portion of coupons, and we will give you another Gasoline Coupon Book, free—no charge."

Oil men in Buffalo have charged that the club was not very careful in seeing that only members benefited from the 3-cent discount. Friends of members could get hold of books, it was said, as no limit was put on the number a member could get. Theoretically a member would have to return to the club the empty coupon holder to get another book. Actually, it was said in Buffalo, members could get additional books for the asking.

As the club's membership fee was $12 a year, its price could be more than saved by the average motorist.

Warner Quinlan Co. has a contract with the Automobile Club of New York allowing club's members 2 cents a gallon off the service station price. Its contract expires Dec. 31, 1928.

The United Motors Service Co., also of New York, sells memberships which give 2 cents a gallon off the service station price. These memberships are good at a large number of individually owned stations most of which handle Standard Oil Co. of New York gasoline.

Rebates of 2 and 3 cents a gallon are granted by the Failings Gasoline Stations, Inc., to members of the Automobile Club of Utica. There is said to be no contract between the oil company and the club. The practice began last spring.

Clifton Williams Oil Co., Schenectady, is granting automobile club members 2 cents a gallon off on gasoline and giving them two quarts of oil with every 25 gallons of gasoline. This contract, it is said, is to continue indefinitely.

Efforts have been made by the Decimo club in Ohio several months ago to get discounts for members. So far as can be learned no oil company fell for the scheme. The club has since broken up because of internal dissension, according to the Better Business Bureau of Cleveland, and one officer is suing other officers for an accounting of funds.

New Stations Building

Plainfield, N. J.—F. M. Brown, bulk station.
Fitchburg, Mass.—Mazzee & Sharff, filling station.
Laddonia, Mo.—Diamond Oil Co., filling station.
Hanover, Ill.—J. Arthur & A. R. Speer, filling station.
Ord, Neb.—J. G. Clark, filling station.
Alice, Tex.—J. J. Denison, filling station.
Silsbee, Tex.—John W. Dulaney, filling station.
Elmer, Mo.—W. E. Hertzler, filling station.
Boonville, Mo.—Skelly Oil Co., filling station.
Harrison, Neb.—J. H. Lushbaugh, service station.
Humboldt, Ia.—A. Christensen, filling station.
Springfield, Mo.—Virginia H. Prophet, filling station.
Springfield, Mo.—E. M. Wilhoit Co., filling station.
Sherman, S. D.—M. & E. Filling station, filling station.
Belle Fourche, S. D.—The Texas Co., bulk station.
Warren, Pa.—Motor Lighthouse Co., Super service station.
Wellington, Tex.—J. F. Holley, filling station.
Yreka, Calif.—Richfield Oil Co., filling station.
Norristown, Pa.—Shaw & Heavner, filling station.
Turlock, Calif.—Union Oil Co., three service stations.
Topeka, Kans.—J. J. Bausch, service station.
El Paso, Tex.—R. Billard, filling station.
Rocky Mount, Va.—Standard Oil Co., filling station.
Wheeling, W. Va.—South Penn Oil Co., filling station.
Oneida, N. Y.—Z. & M. Oil Co., filling station.
Athens, Ga.—Standard Oil Co., two filling stations.
Danbury, Conn.—K. & K. Realty Co., filling station.
Danbury, Conn.—Antoinette Macko, filling station.
Perth Amboy, N. J.—Standard Oil Co., filling station.
Columbia, Mo.—Keystone Service Co., filling station.
Columbia, Mo.—F. C. Tuttle, filling station.
Columbia, Mo.—M. G. Proctor, filling station.
El Paso, Tex.—Magnolia Pet. Co., service station.
Sand Hill, R. I.—Mary B. Reynolds, filling station.
Allenton, R. I.—Mabel T. Budlong, filling station.
Ash Flat, Ark.—Willie Green filling station.
Eureka, Calif.—Standard Oil Co., filling station.
Enterprise, Kans.—Ernest Schroeder, filling station.
Frankfort, O.—Louisiana Oil Refining Corp., filling station.
Hamilton, Mo.—L. W. Sloan, filling station.
Circleville, O.—H. M. Crites, filling station.
Chicago, Ill.—United Petroleum Corp., filling station.
Lorain, O.—Braegger & Jackson, super service station.
Alpha Junction, Ill.—J. T. McCurdy, filling station.

Membership Increased

KANSAS CITY, Sept. 28.—George S. Allee, president of the Missouri Oil Men's Association announces the addition of 14 new companies to the membership roster of that organization. The new members are:

Home Oil Co., Centralia; Wagener Oil Co., Napoleon; People's Oil Co., Rushville; Ray Oil Co., Burlington Junction; Kramer Oil & Tire Co., Maryville; Sands Petroleum Co., Kirksville; Satin Oil Co., Tulsa, Okla.; Fuel Service Co., Malden, Mo.; Torch Oil Co., St. Louis; Service Oil Co., Carruthersville; Cape Oil Co., Cape Girardeau; Home Oil & Gas Co., Carruthersville; East Missouri Oil Co., Farmington; Jackson Oil Co., Jackson.

Why does he look at the label?

NOT one man in a thousand possesses expert knowledge that qualifies him to pass critical judgment on a suit of clothes. He has neither time nor the inclination to be an expert on the infinite number of articles he buys.

In his mind that label is a warranty of value—a personal promise of complete satisfaction from the manufacturer. He takes it for granted that the manufacturer whose name appears on the label knows his business. So he buys on confidence.

And the confidence of the buying public has become so integral a part of the success of manufacturer that he dare not jeopardize it by slighting value.

The American Steel Package Company was founded on the ideal of manufacturing a product identified with a high degree of value and during years of manufacture we have constantly strived to add to the esteem in which Defiance Steel Barrels are held among buyers in the oil field.

THE AMERICAN STEEL PACKAGE CO.
Defiance, Ohio

DEFIANCE
Distinguished for Honest Value

Draw New Customers from Far and Near
ALLISON COUPON BOOKS
Accurate—Compact—Convenient

Motorists go out of their way to find a filling station with Allison Coupon Books. They appreciate their convenience and simplicity. And filling stations find them absolutely accurate. Furnished in stock or special designs. *Send for samples and prices.*

Allison Coupon Company
Indianapolis, Indiana
Coupon Book Specialists Since 1888

Dave Morris Tells How Nourse Became Midwest Institution

CLEVELAND, Sept. 28

DAVE MORRIS, vice president of the Nourse Oil Co., Kansas City, has turned Horatio Alger and written a heroic tale of the rise of Jack Nourse who 21 years ago entered the lubricating oil business for himself and has since made himself a middle western institution.

An idea, a $3.56 shoestring, a tireless spirit and a diamond ring good for $150 at "uncle's" were the settings at the birth of the Nourse Oil Co. Then followed the travail of the panic of 1907. But in true Alger style the hero triumphs in the end. Here is Biographer Dave's masterpiece reprinted from the latest issue of "News from Nourse," Jack's house organ:

I've worked for Jack Nourse 21 years. Lots of folks ask me where he got hold of me, so I'll answer that question by telling you some facts about Jack's early struggles which nobody knows about but him and me.

Twenty-one years ago this month (September) it was that Jack Nourse started in business for himself. His capital totaled up about as follows: An idea, $3.56 in cash, a diamond ring, a never-say-die spirit—and a smile. By sheer "hanging on and smiling" he pyramided that capital into a business that now has 14 salesmen on the road, and distribution of its products in 15 states.

The story of every real success, of course, goes back to some earlier failure. So going back to the summer of 1907 we find Jack Nourse working as an oil salesman out of St. Paul, Minn. Those were panicky times, as most of us can recall, and the company "Jack" was working for "went broke."

In September of that year, "Jack" found himself back in Kansas City, out of a job, and with only $3.56 in his pocket. He owned a diamond ring, however, that he had bought on the installment plan for $300. This ring he managed to pawn for $150, and with his $153.56 in his pocket, and an idea in his head, he boarded the next train for Chanute, Kansas.

At Chanute he arranged with an oil company to fill his orders on the "drop shipment" plan. Then he "hit the road," on his own.

The panic of 1907 was then at its worst. "Scrip" was being used extensively instead of money. Business was congealed, and a dollar hard to get.

Orders were few and far between. "Jack's" capital dwindled to $50. Yet he never quit smiling. A lot of folks down through Kansas can still remember that famous smile of his when he would bob up with his little sample case and say, "Business Is Good!"

This in spite of the fact that often he scarcely had railroad fare to the next town.

To make traveling expenses as he went along, "Jack" devised a scheme decidedly unique, if not original. After closing a sale he would offer a discount of 3 per cent, in addition to the usual discount, for "cash on the barrel-head." Then he would pocket his commission, forward the balance to the oil company at Chanute along with the order, and proceed to the next town.

Sometimes this scheme worked, and sometimes it didn't. Once, at Barnes, Kansas, "Jack" got his order all right, but no cash. He had 50 cents in his pocket. His next stop was Greenleaf, Kansas, seven miles distant. A terrific snowstorm was raging.

There were no more trains that day to Greenleaf, and 50 cents was not enough to hire a rig. There was nothing else to do but walk! If he could walk to Greenleaf, sell some oil there and get cash, he would be able to eat that night and sleep in a bed. Otherwise he would probably have to go hungry or sleep in the railroad station.

So, picking up his sample cases, "Jack" set out on his seven-mile hike through the snowstorm. As he often related afterward, those were the longest seven miles he ever walked in his life.

Arriving at Greenleaf, half frozen, he made a sale, got cash, and that night the local hotel got a customer, while the railroad station lost a roomer.

Hard times cannot last forever with a man who continually smiles and says, "Business Is Good!" And it was not many weeks until things were running fairly smooth for Jack Nourse.

Orders became more numerous, money began to loosen up a bit, and "Jack" decided to open an office of his own at Chanute. After all, it had been rather an odd arrangement—his being a salesman without a "home office."

About this time "Jack" wired me. I was then working in St. Paul, Minn., and had previously worked in the office of the now defunct oil company where Jack was salesman.

Jack offered me $13 a week to come to Chanute to look after his office there. He told me he didn't know whether he could meet his "$13 weekly payroll" always on time, but that he would like to have me if I'd come.

That day I wired back, "Will be in Chanute Monday morning." Payday or no payday, I believed in Jack Nourse. I knew he believed in himself and in what he was selling. And that, to my mind, is often better capital than money in the bank.

The following Monday, the Chanute office was opened. Business grew steadily. September of the next year the office was moved to Kansas City to permit greater expansion. This was the real beginning of the Nourse Oil Co. as it is today.

About that diamond ring. Mrs. Nourse now wears the diamond, and it is among her most prized possessions. Just as soon as Jack made enough money, he redeemed the ring from the pawnbroker, and fearful of losing it, gave it to me to put in a safe deposit vault. Later the diamond was remounted, in the ring Mrs. Nourse now wears as a memento of "Jack's" early struggles preceding his spectacular rise in the business world.

Atlantic Sells Stock In Superior Oil

TULSA, Sept. 28.—With the acquisition of control of the Superior Oil Corp. by Naphen & Co., New York financial house, E. R. Perry has been made chairman of the board of directors. Mr. Perry formerly was a vice-president of Cosden & Co., resigning from that company when J. S. Cosden left.

H. G. Davies, president of the Superior, continues in that capacity under the new control and J. H. O'Rear, for several years head of the land department and assistant to the president, was made vice-president and director.

* * *

PHILADELPHIA, Sept. 28.—Following sale of the 296,900 shares of Superior Oil Corp. stock by Atlantic Oil Producing Co., subsidiary of the Atlantic Refining Co., these officers of Superior resigned:

J. H. Stone and R. H. Colley, directors and vice-presidents; E. J. Henry, secretary; J. B. Rettew, general counsel, and L. J. Reilly, assistant secretary.

Atlantic sold its interest in Superior to Naphen & Co. The price was not disclosed. Naphen & Co. is reported to have acquired additional stock in Superior since buying Atlantic's holding.

The sale of the stock does not affect Atlantic's contract on Superior's production. This contract has until Jan. 24, 1930, to run.

R. C. Stovall has been transferred from the home office accounting department of the Magnolia Petroleum Co., Dallas, to the Pampa district, where he will be assistant to Supt. A. G. Post in the Texas Panhandle territory.

TRIPLEXD DISTRIBUTORS

ALL sizes and lengths of Triplexd Hose are carried in stock in these cities:

Atlanta
The Dixie Culvert & Metal Company
P. O. Box 1343

Boston
Oilmen's Service & Supply Company
142 Berkeley Street

Brooklyn
Metal Hose & Tubing Company
236 Tillary Street

Chicago
Amco Sales Corporation
1213 West Washington Boulevard

Cincinnati
The Doermann-Roehrer Company
450 East Pearl Street

Cleveland
Amco Sales Corporation
4336 Broadway

Denver
Eaton Metal Products Company
4800 York Street

Detroit
Amco Sales Corporation
5459 Grand River Avenue

El Paso
Brownfield & Campton
1020 East Overland Street

Wichita Falls
T. F. Bruton
P. O. Box 1327

Houston
Peden Iron & Steel Company
700 North San Jacinto Street

Jacksonville
The Dixie Culvert & Metal Company

Kansas City
Butler Manufacturing Company
13th Street and Eastern Avenue

Los Angeles
Shields, Harper & Company
1625 South Hill Street

Louisville
Ben F. Offutt & Company
664 South Second Street

Memphis
Alton & Burge
245 Monroe Avenue

Minneapolis
Butler Manufacturing Company
900 Sixth Avenue, S. E.

New Orleans
The Coe Belting & Supply Company
211 South Peters Street

Omaha
A. N. Eaton, Metal Products

13th and Willis Streets

Pittsburgh
Rutledge Equipment Company
341 Second Avenue

Richmond
Richmond Engineering Company
P. O. Box 514

Saint Louis
Metal Hose & Tubing Company
1621 Pine Street

San Antonio
Peden Iron & Steel Company
1401 South Flores Street

San Francisco
Shields, Harper & Company
873 Mills Building

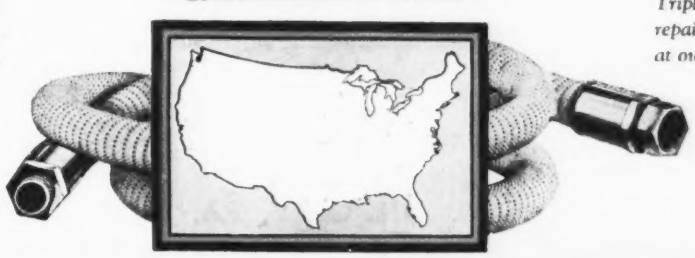
Seattle
Shields, Harper & Company
67 Columbia Street

Toronto, Canada
Dunlop Tire & Rubber Goods Co., Limited
870 Queen Street, East

London, England
J. Bazley-White
3 Love Lane
Eastcheap, E. C. 3

TRIPLEXD INSURED GASOLINE PUMP HOSE will be adjusted on the basis of 1000 days for ANY failure of service, short of fire or theft

METAL HOSE & TUBING CO.
INCORPORATED
236 TILLARY STREET
BROOKLYN, N.Y.



Triplexd Tank Wagon and Tank Car Hose and all other sizes of Triplexd will always be repaired free of charge at our factory

TRIPLEXD GASOLINE HOSE

Non-viscous neutrals make trouble

—so we remove it altogether!

Your specifications should always call for oil that is:

"Super-refined, redistilled, Sharpless Processed, straight run from pure Penna Crude"—

and, you'll have as fine a motor oil as money or brains can produce.

That is the process through which Penn-Empire is put—removing those trouble-making non-viscous neutrals that are too light for properly lubricating internal combustion engines.

With Penn-Empire you can sell the highest quality oil, always keeping customers satisfied and making a nice profit.

PENN EMPIRE 100% PURE PENNSYLVANIA OIL

Some territories still available.

EMPIRE OIL WORKS, INC., OIL CITY, PA.

Refineries: Reno, Pa., and Tidioute, Pa.

PENN-EMPIRE

OILS and GREASES

When you buy Penn-Empire you get the best.

N. P. N. Ownership Statement

Statement of the ownership, management circulation, etc., required by the Act of Congress of August 24, 1912, of National Petroleum News, published weekly at Cleveland, Ohio, for October, 1, 1928, State of Ohio, County of Cuyahoga.

Before me, a notary public in and for the State and County aforesaid, personally appeared A. W. Brobst, who, having been duly sworn according to law, deposes and says that he is the secretary of The National Petroleum Publishing Company and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse of this form, to-wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, The National Petroleum Publishing Company, Cleveland, Ohio; editor, Warren C. Platt, Cleveland, Ohio; managing editor, V. B. Guthrie, Cleveland, Ohio; and business managers are: None.

2. That the owners are: Warren C. Platt, Cleveland, Ohio; Bess H. Platt, Cleveland, Ohio; V. B. Guthrie, Cleveland, Ohio; A. W. Brobst, Cleveland, Ohio; Wm. H. Little, Tulsa, Oklahoma.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of the total amount of bonds, mortgages, other securities are None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any contain not only the list of stockholders and security holders as they appear upon the books of the company, but also, in cases where the stockholder or security holders appears upon the books of the company as trustees or in any other fiduciary relation, the names of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiants' full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise to paid subscribers during the six months preceding the date shown above is (This information is required from daily publications only.)

(Signed) A. W. BROBST, Secretary.

Sworn to and subscribed before me this 24th day of September, 1928.

(Signed) H. L. RICHEY, Notary Public.

(My commission expires 5-7-30.)

SHREVEPORT, Sept. 29.—General offices of the Shreveport Producing & Refining Co., Inc., have been moved from the Commercial National Bank building, to the Slattery building where the company has taken an entire floor.

Air Reduction Co., Inc., 342 Madison Ave., New York, Aug. 1 purchased the business and property, including one oxygen plant, of the Ohio Oxygen Co., Niles, O. This additional plant gives the former company a total of 37 plants in the important industrial centers of the country.

ON THE LAZY BENCH

National Petroleum News

The Call of the Open Road

She—Oh! Harold you say you bought a car. What kind?

He—It's a runabout.

She—Yes—

He—Yes—run-a-about a block and stop.

—Loreco Diamond

* * *

Arithmetic teacher. "Billy, if your father's car made twenty miles to the gallon of gas and he bought ten gallons, how far could he drive?"

Billy. "Not an inch; ma drives our car."

—Our Sun

* * *

St. Peter scanned the tally that had been kept on the latest applicant.

"I can hardly let you into heaven on this record," he said. "Just what was your occupation on earth?"

"I was a truck driver," returned the disembodied soul.

"Open the gates, boys! He must have the right of way."

—Skelly News

* * *

A nervous young gentleman, all a-flutter over the prospect of attending a party in a nearby city, rushed breathlessly into the railroad station at Bangs Center.

"When does the first train leave for Galesburg?" he asked of the white-haired station agent who was perched on a truck in the baggage room.

"Son," replied the agent, "the first train left for Galesburg in 1861."

—Stanolind Record

* * *

"Offisher, you'd better lock me up. Just hit my wife over the head with a club."

"Did you kill her?"

"Don't think so. Thash why I want to be locked up."

—The Pure Oil News

* * *

"Marriage," said the philosopher, "is like a railroad sign. When you see a pretty girl you stop; then you look, and after you're married you listen."

—The Marion Line

* * *

"Do you hear that woman next door pounding? It's getting on my nerves."

"I wouldn't let anything like that disturb me if I were in your place."

"You would if she had just borrowed your silver mounted hairbrush." *W. O. W.*

Are They Catching?

"This tonic is no good."

"What's the matter?"

"All the directions it gives are for adults, and I never had them."

—Our Sun

* * *

"Wow! Mussolini sure has things completely under his control!"

"Just how?"

"Man, every time he has a headache all Italy takes an aspirin tablet."

—Skelly News

* * *

"I'm so glad to meet your husband again," she said. "He once made an impassioned plea for my hand."

"I don't believe it," the other woman replied.

"Believe it or not, as you please. He had fallen into a manhole."

W. O. W.

* * *

A one-way street is one on which the motorist is only bumped from the rear.

—Loreco Diamond

* * *

It seems there were a couple of collegers, Fresh and Frosh.

"So you're going to have your car scraped and painted this spring?" inquired Fresh.

"Yes," replied Frosh (although, of course, it might have been two other fellows). "All the wise cracks on it are out of date now."

—Skelly News

* * *

Lawyer—Then you say this man was drunk?

Witness—I do not. I simply said that he sat in his car for three hours in front of an excavation waiting for the light to turn green.

—The Loreco Diamond

* * *

Passenger on Pullman (finding one black shoe and one tan shoe under his berth in the morning). "Porter, what are these shoes doing here?"

Porter (bewildered). "Well, if dat don't beat all! Dat's de second time dat's happened dis mawnin'."

—Our Sun

* * *

"It took you a long time to pull that fellow's tooth," said the dentist's assistant.

"Yes, he married the girl I loved."

—Magnolia Oil News

* * *

First Lady Parachute Jumper: "How was that last husband of yours?"

Second Lady Parachute Jumper: "Good to the last drop."

—Skelly News

Reinforced Folio

362—A very compact folio, having three pockets. Made from the best grade smooth black cowhide. Stiffened bottom reinforced with metal studs. Case contains six 4-oz. bottles and five grease jars. Two inner cases may be carried.

Less 10% for Cash

Other styles in our FREE Catalog

L-U-C-E

Builders of Sales Luggage

614 Delaware, KANSAS CITY, MO.

Guaranteed 100% PURE PENNSYLVANIA OIL

Finest Grades of 100% Pure Pennsylvania Products

GASOLINE
KEROSENE
FUEL OIL
NEUTRALS
BRIGHT STOCKS
MOTOR OILS

Our 30 years of experience is our guarantee to you of the finest and best products that can be produced.

Let us quote on your requirements.

Write—Wire—Phone

Superior Oil Works
Warren, Penna.

PILOTS, AIRPORT OPERATORS, AND ENGINE M

NATUR

NAVAL RESERVE AIR UNIT
ROCKAWAY BEACH, L. I.
NEW YORK

January 17th, 1927

Chestnut & Smith Corporation,
Cheyenne at Seventh,
Tulsa, Oklahoma.

Gentlemen:-

Thanks for your letter of December 23. I am very much pleased to learn that Anacostia and Wright Field are going to investigate Naturaline.

During the acceptance trials of the Vought Corsair powered with the Pratt & Whitney "Wasp" engine in which we raised the speed from 147 miles per hour to 153.5 per hour, I had ample oppurnity to definftely prove to myself the advantages of Naturaline over the ordinary domestic aviation fuel. The plane took off repeatedly in five seconds and showed no tendency to choke or back fire when the throttle was opened quickly from idling speed to full out, which would in itself indicate the absence of "vapor" lock" in the manifold.

The quick starting factor made possible by the use of this fuel in cold weather flying is enough to recommend Naturaline to any pilot.

Yours very truly,
Lieut.U.S.N.R.

PITCAIRN AVIATION INC
LAND TITLE BUILDING
PHILADELPHIA PENNSYLVANIA

July 31,1928

Mr Fred L. Foster
Chestnut & Smith Corporation
Post Office Box 2003
Tulsa, Oklahoma

Dear Mr. Foster:

We have been using your Naturaline on our New York-Atlanta airmail line for several months and find it very satisfactory. We find that our motors run considerably smoother than they did on Domestic Aviation Gasoline and that they develope about 25 to 50 more revolutions. Also our consumption is running a little less per hour.

I want to thank you for your assistance and co-operation in arranging a supply of gasoline in the various towns along our line. The directness of this distribution has made it possible for us to procure Naturaline at a very reasonable price.

Sincerely yours,
James G. Ray

JCR:L

NATURALINE COMPANY OF AMERICA
NATURALINE
A SUPER AVIATION MOTOR FUEL

SEND IT BY

NATURALINE COM

CHESTNUT & S
TULS

Compilation Of Mid-Continent Refinery Operations

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Mid-Continent Refinery Operations Week Ended September 28 (By Telegraph)

	Kansas	Oklahoma	North & Cent. Texas	North La.-Ark.	Total Week Ended Sept. 28	Total Week Ended Aug. 31
Plants Reporting	12	29	29	12	82	82
Da. Av. Cap. (bbls.)	92,000	160,200	130,100	54,900	437,200	437,200
Da. Cracking Capacity	30,700	52,600	17,200	22,700	123,200	123,200
Da. Av. Crude Runs	73,003 — 3.0	122,649 + 0.2	91,011 + 1.0	68,706 + 9.4	355,369 + 1.3	360,743
Da. Av. Other Oils	12,471 + 58.7	4,752 + 83.3	4,846 — 19.1	478 — 77.4	22,547 + 21.5	19,374
GASOLINE—Gallons						
Stocks, Sept. 21	6,487,000	22,767,000	12,490,000	5,698,000	47,442,000	47,261,000
Prod. 9-21 to 9-28	11,367,000 + 4.8	20,380,000 + 7.8	10,248,000 — 1.5	6,110,000 + 5.3	48,105,000 + 4.6	47,227,000
Ship. 9-21 to 9-28	11,022,000 — 8.1	19,485,000 + 9.6	9,792,000 — 14.7	6,387,000 + 25.1	46,686,000 + 0.7	47,362,000
Stocks, Sept. 28	6,832,000 + 5.3	23,662,000 + 3.9	12,946,000 + 3.7	5,421,000 — 4.9	48,861,000 + 3.0	47,126,000
Ratio Sales to Prod.	97%	95.6%	95.6%	104.5%	97.1%	100.3%
KEROSENE—Gallons						
Stocks, Sept. 21	7,796,000	3,631,000	1,554,000	252,000	13,233,000	12,963,000
Prod. 9-21 to 9-28	2,240,000 — 11.6	2,587,000 — 5.5	1,518,000 — 10.7	444,000 + 73.4	6,789,000 — 3.9	7,431,000
Ship. 9-21 to 9-28	2,424,000 — 4.3	2,137,000 — 16.5	1,326,000 — 15.9	188,000 — 38.8	6,075,000 — 12.9	7,727,000
Stocks, Sept. 28	7,612,000 — 2.4	4,081,000 + 12.4	1,746,000 + 12.4	508,000 +101.6	13,947,000 + 5.4	12,667,000
Ratio Sales to Prod.	108.2%	82.6%	87.4%	42.3%	89.5%	104.0%
STOVE DISTILLATE—Gallons						
Stocks, Sept. 21	1,878,000	3,354,000	666,000	89,000	5,987,000	6,063,000
Prod. 9-21 to 9-28	330,000 +108.9	726,000 — 9.5	231,000 + 12.7	123,000 + 6.0	1,410,000 + 10.1	1,184,000
Ship. 9-21 to 9-28	174,000 — 44.1	726,000 — 2.0	240,000 +328.6	153,000 + 44.3	1,293,000 + 6.5	971,000
Stocks, Sept. 28	2,034,000 + 8.3	3,354,000 0	657,000 — 1.4	59,000 — 33.7	6,104,000 + 2.0	6,276,000
Ratio Sales to Prod.	52.7%	100.0%	103.9%	124.4%	91.7%	82.0%
GAS OIL—Gallons						
Stocks, Sept. 21	6,445,000	38,564,000	4,972,000	6,274,000	56,255,000	54,971,000
Prod. 9-21 to 9-28	1,851,000 + 0.7	2,101,000 — 14.2	2,134,000 + 38.8	2,324,000 + 3.7	8,410,000 + 4.3	8,530,000
Ship. 9-21 to 9-28	1,710,000 — 11.9	2,828,000 + 27.8	1,364,000 + 5.2	2,331,000 + 3.4	8,233,000 + 6.9	8,041,000
Stocks, Sept. 28	6,586,000 + 2.2	37,838,000 — 1.9	5,742,000 + 15.5	6,267,000 — 0.1	56,432,000 + 0.3	55,460,000
Ratio Sales to Prod.	92.4%	134.6%	63.9%	100.3%	97.9%	94.3%
FUEL OIL—Gallons						
Stocks, Sept. 21	23,667,000	57,822,000	74,050,000	21,087,000	176,636,000	167,341,000
Prod. 9-21 to 9-28	7,691,000 + 1.5	10,279,000 + 18.6	11,707,000 — 8.7	9,912,000 + 6.3	39,589,000 + 3.1	38,035,000
Ship. 9-21 to 9-28	4,508,000 — 25.4	8,192,000 — 3.0	13,731,000 + 8.3	7,651,000 + 2.3	34,082,000 — 1.6	35,730,000
Stocks, Sept. 28	26,850,000 + 13.4	59,909,000 + 3.6	72,026,000 — 2.7	23,358,000 + 10.7	182,143,000 + 3.1	169,646,000
Ratio Sales to Prod.	58.6%	79.7%	117.3%	77.2%	86.1%	93.9%

Gasoline Produced by Various Methods, Week Ended September 28

	Kansas	% of Total	Oklahoma	% of Total	Texas	% of Total	Louisiana-Arkansas	% of Total	Total	% of Total
Straight Run	7,346,000	64.6	13,706,000	67.2	8,044,000	78.5	2,797,000	45.8	31,893,000	66.3
Cracked	3,384,000	29.8	5,394,000	26.5	1,774,000	17.3	2,692,000	44.0	13,244,000	27.5
Natural	637,000	5.6	1,280,000	6.3	430,000	4.2	621,000	10.2	2,968,000	6.2
Total	11,367,000		20,380,000		10,248,000		6,110,000		48,105,000	

+ or — columns are % change from previous week.

Gasoline Output at New High in Mid-Continent

Staff Special—By Telegraph
TULSA, Oct. 2

BOTH production and shipments of gasoline at 82 refineries in the Mid-Continent field continued at a high rate during the last week of September, according to reports gathered by NATIONAL PETROLEUM NEWS. Production of gasoline set a new high record for reporting plants when it increased 4.6 per cent during the week ended Sept. 28, to a total of 48,105,000 gallons. Shipments were only 4,000,000 gallons below the peak of the year reached in August. Total shipments for the week were 46,686,000 gallons, an increase of 0.7 per cent over the week ended Sept. 21.

Crude oil charges to stills averaged 355,369 barrels per day, within 1,000 barrels of the highest reached this year. As compared with the previous week, crude runs showed an increase of approximately 5000 barrels daily

Summary for the Month

Production and shipments, all reporting refineries, for four weeks ended Sept. 28. Change in stocks figured from Aug. 31.

GASOLINE

	Gallons
Production	184,841,000
Shipments	183,106,000
Net change in stocks	+ 1,735,000
Ratio sales to production	99.1%

KEROSENE

	Gallons
Production	27,369,000
Shipments	26,089,000
Net change in stocks	+ 1,280,000
Ratio sales to production	95.3%

STOVE DISTILLATE

	Gallons
Production	4,834,000
Shipments	5,006,000
Net change in stocks	— 172,000
Ratio sales to production	103.6%

GAS OIL

	Gallons
Production	31,773,000
Shipments	30,801,000
Net change in stocks	+ 972,000
Ratio sales to production	96.9%

FUEL OIL

	Gallons
Production	150,717,000
Shipments	138,220,000
Net change in stocks	+ 12,497,000
Ratio sales to production	91.7%

FREEDOM

100% Pennsylvania Motor Oil

—*guaranteed by the complete refinery which makes it*

Just as buyers of machinery prefer their purchases covered by one guarantee, you can buy Freedom 100% Pennsylvania Motor Oils on the same basis.

All elements which go into these exceptional products are refined by this one complete organization, The Freedom Oil Works Company, in its two plants, at Freedom and at Coraopolis, Penna.

At Freedom, is refined the wonderful 100% Pennsylvania Crude Neutrals which are used *exclusively*.

At Coraopolis, is refined the exceptional 450 Bright Stock (Sharples Process) which also is used *exclusively*.

Then the two are blended to high specifications by this 48 year old organization — you get a complete line of oils, consequently, that attracts business and HOLDS it.

Immediate deliveries can be made in tank cars, in compartment cars, barrels, or drums.

Guaranteed 100% PURE PENNSYLVANIA OIL

Permit No. 31

Also available for immediate shipment

450 Bright Stock (Sharples Process) which requires less neutral to blend to the ordinarily required specifications.

100% Pennsylvania Motor Oils, *blended to your own Specifications*, from Freedom 450 Bright Stock and Freedom 100% Pennsylvania Crude Neutrals.

Freedom Quality Stocks
600 Steam Refined
635 Steam Refined
650 Steam Refined

Freedom 300 Mineral Seal Oil made to Railroad Specifications.

Freedom Filtered Burning Oils.

The Freedom Oil Works Company
Freedom, Penna.
Established 1879
Refineries at Freedom and Coraopolis, Pennsylvania

FREEDOM

average. The big increase in gasoline production apparently was due to increases in the amount of partly refined oils charged to stills in Oklahoma and Kansas.

Kansas refiners increased their charges of unfinished oils to stills 4600 barrels daily average, of 58.7 per cent and as a result increased their gasoline production 4.8 per cent in spite of a reduction of crude runs. In Oklahoma both crude and partly refined oil runs were increased causing gasoline production to increase 1,371,000 gallons. The increase in gasoline production in Louisiana and Arkansas was the result of an increase of 4000 barrels daily average in crude runs.

Gasoline stocks at all reporting plants increased 1,420,000 gallons during the week, to 48,861,000 gallons. At the current rate of shipments gasoline stocks now represent approximately one week's supply. In the past 60 days, reporting plants have kept their gasoline stocks almost unchanged. Present stocks are 1,735,000 gallons above the level on Aug. 31 and are 1,598,000 gallons lower than the total of 50,459,000 gallons reported on Aug. 3, eight weeks ago. A year ago gasoline stocks totaled 57,037,000 gallons on Sept. 30, and the lowest point reached by stocks that year was 54,778,000 gallons.

Kerosene stocks increased 700,000 gallons during the past week to 13,947,000 gallons. The increase was the result of a drop of 900,000 gallons, or 12.9 per cent, in shipments. All districts except Kansas added to kerosene storage. In the past four weeks kerosene stocks have increased 1,280,000 gallons.

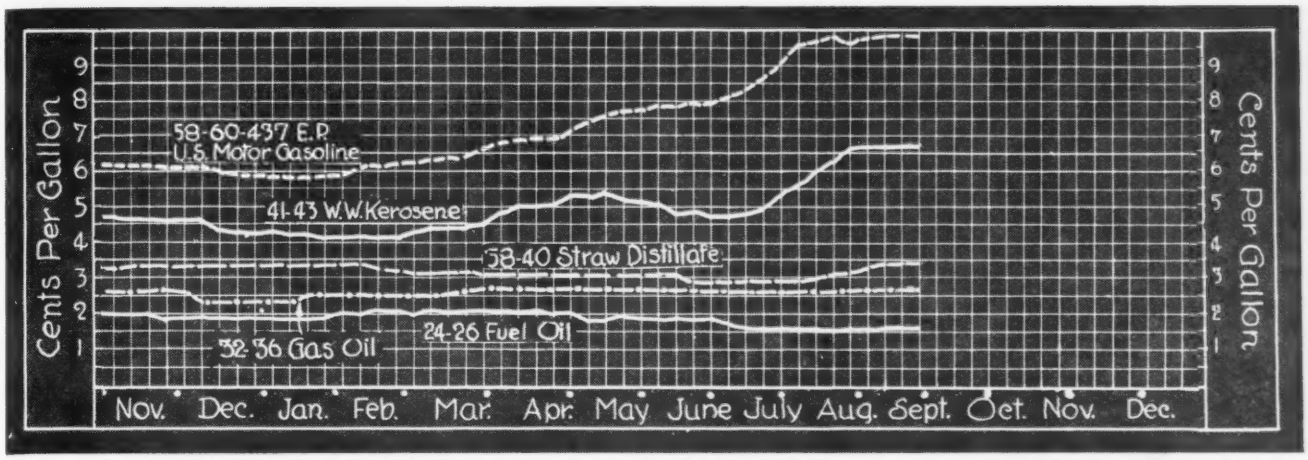
Stove distillate shipments increased 6.5 per cent during the week, continuing the gradual upward trend usual at this season of the year. Total shipments for the week were 1,293,000 gallons. Refiners increased their production 130,000 gallons, or 10 per cent to 1,410,000 gallons. Stocks at the close of the week stood at 6,104,000 gallons, a reduction of 172,000 gallons from the level held on Aug. 31.

Gas oil stocks likewise showed only a minor change, increasing 0.3 per cent to 56,432,000 gallons. Both shipments and production showed increases over the previous week.

Fuel oil demand dropped off about a half million gallons during the week to 34,082,000 gallons. At the same time production was increased 1,200,000 gallons to 39,589,000 gallons. As a result stocks were increased 5,500,000 gallons to 182,143,000 gallons. In the past four weeks fuel oil stocks have increased 12,497,000 gallons and now stand at the highest level in the four years that reports have been gathered by this publication.

HOUSTON, Oct. 1.—G. L. Griffin, manager of the Houston offices of the Chapman Valve Manufacturing Co., Indian Orchard, Mass., announces removal to 2103 Esperson building.

Current Prices of Principal Mid-Continent Refined Products



Prices shown are on Group 3 basis and extended to date shown in Refinery Market Tables Section of this issue

Matthews Quits Roxana, Goes With Battenfeld

KANSAS CITY, Oct. 2.—Ralph R. Matthews, for several years head of the lubricating oil sales department of the Roxana Petroleum Corp., St. Louis, resigned that position Oct. 1 to become sales manager and a stockholder of the Battenfeld Grease & Oil Co. of Kansas City.

Mr. Matthews is well known in the sales and technical branches of the oil business. A chemist by profession, he worked for several years in that capacity for the Roxana and rose from the laboratory to assistant superintendency of the company's Wood River refinery.

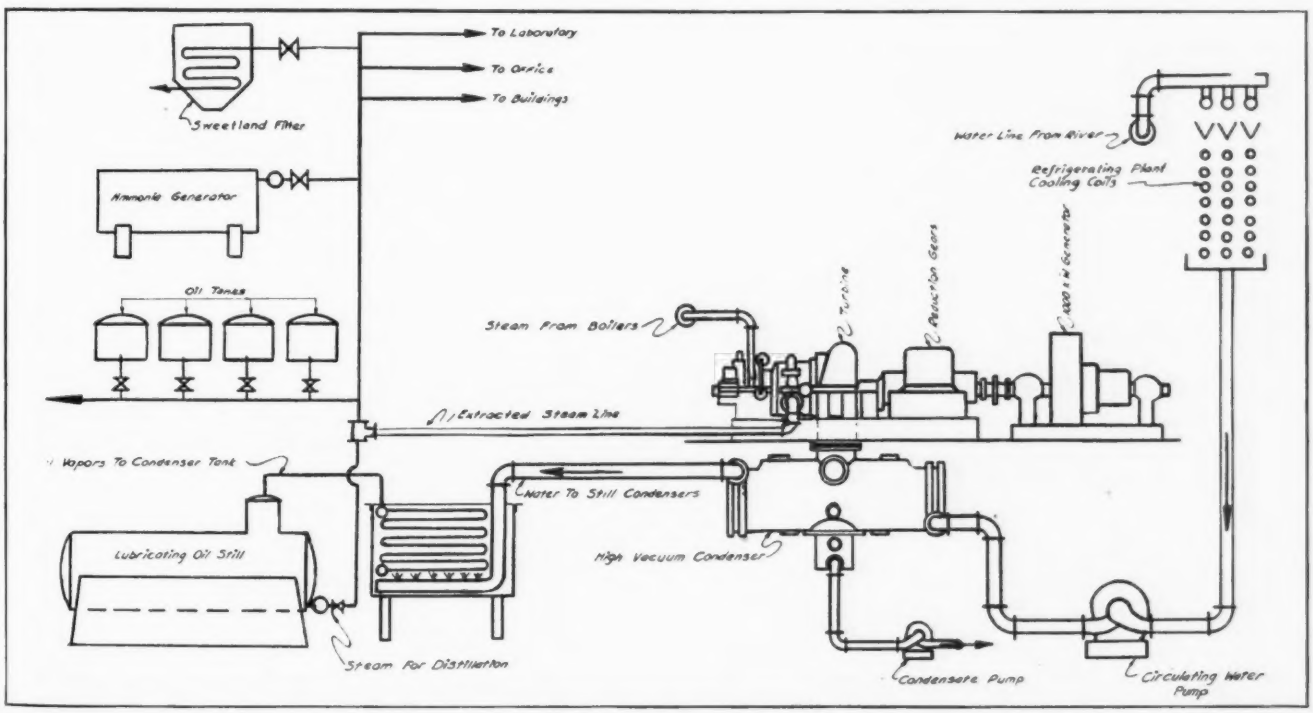
He was largely responsible for the development of a complete line of motor oils when the Roxana decided to go into that branch of the business several years ago, and he was made head of the lubrication oil sales.

Mr. Matthews was for several terms chairman of the Petroleum Division of the American Chemical Society and is credited with a large part in making the division a strong and active force in the technology of the oil industry.

Paleontologist Dies Suddenly in Texas

HOUSTON, Oct. 1.—Mrs. John F. Weinzerl, the former Miss Laura Lee Lane, consulting paleontologist of Houston, died suddenly the night of Sept. 28. Death was attributed to a heart attack. She was 28 years old. Mrs. Weinzerl, who was widely known in her profession, was vice-president of the Houston Geological Society. She was also a member of the American Association of Petroleum Geologists and the Society of Economic Paleontologists.

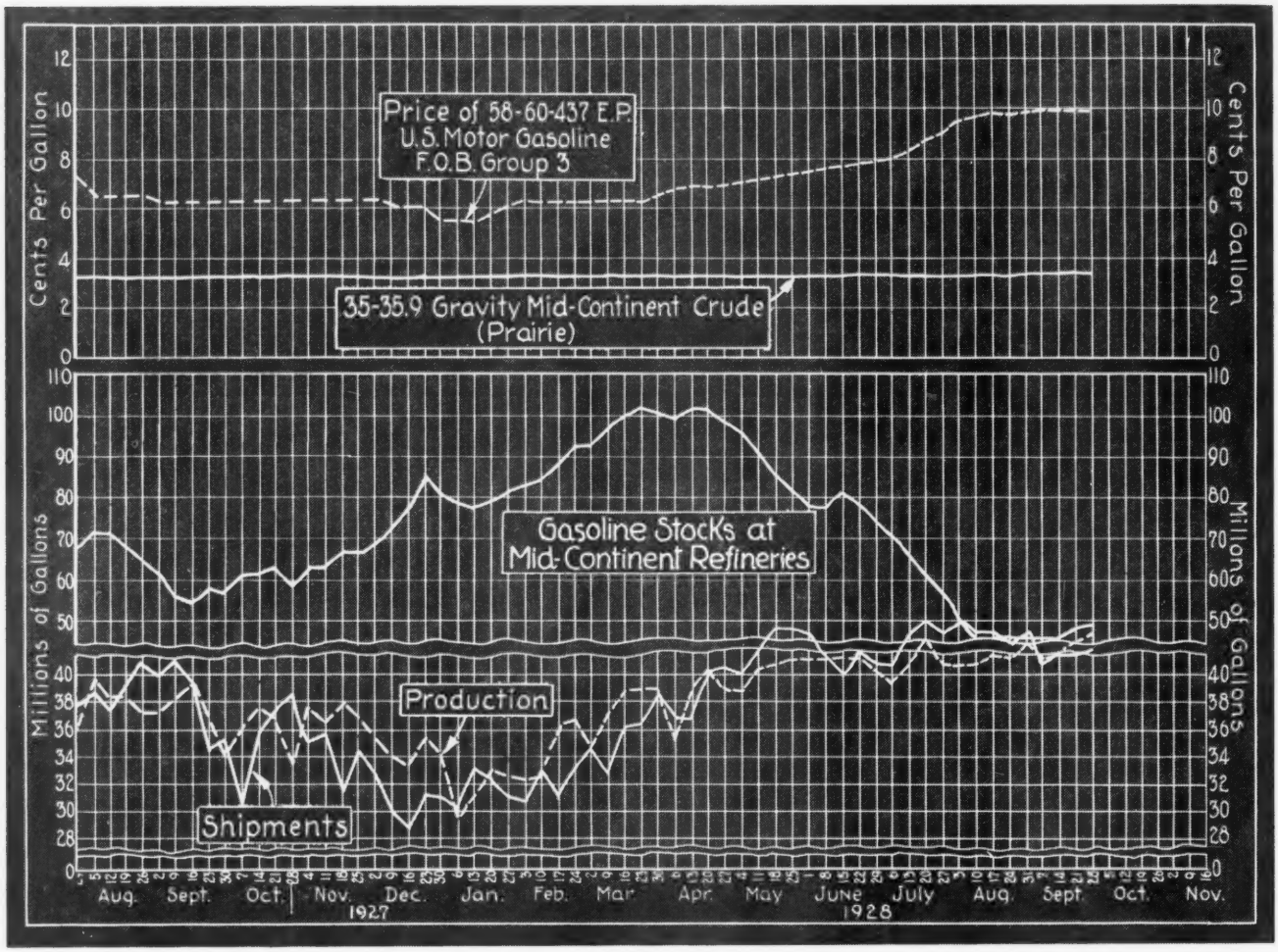
Flow Sheet of Pure Oil Marcus Hook Power Plant (See Story, page 68)



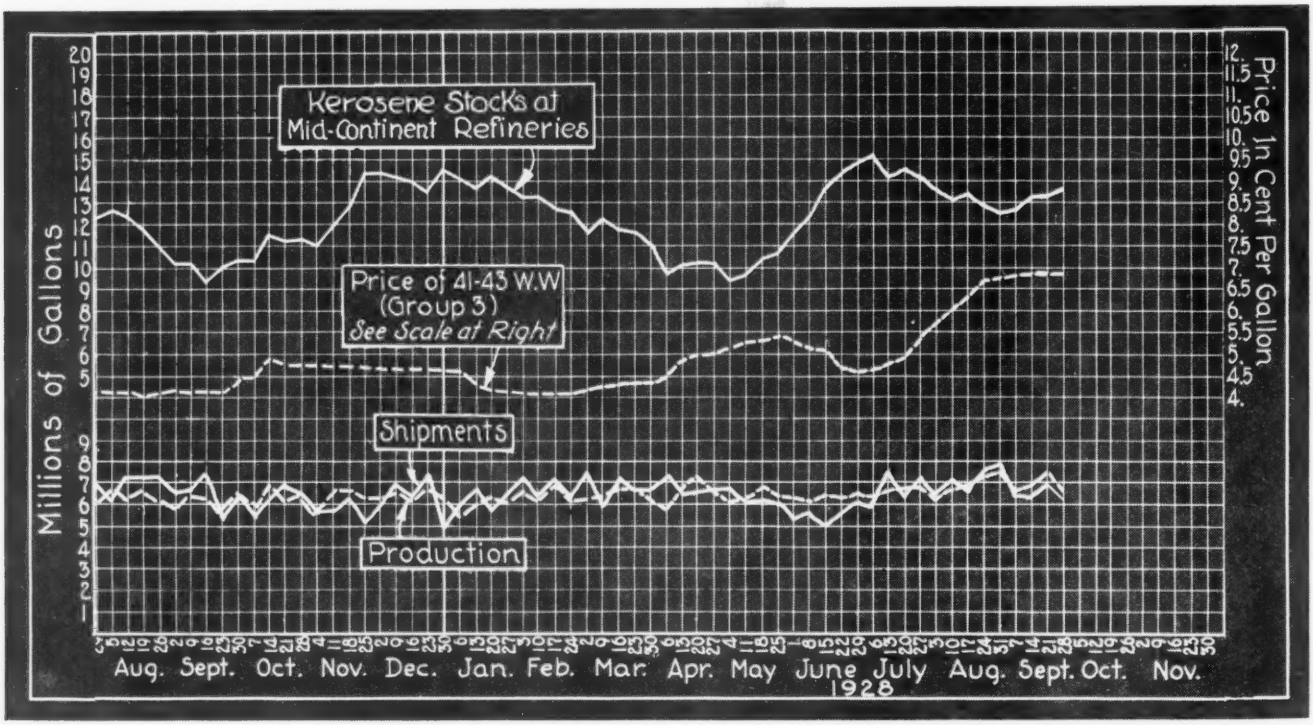
Flow diagram of the power house at the Pure Oil Co. refinery at Marcus Hook, Pa.

Barometer of Mid-Continent Refinery Market—Week Ending September 28

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 82 Plants to National Petroleum News


Price of 58-60-437 E.P. U.S. Motor Gasoline F.O.B. Group 3
35-35.9 Gravity Mid-Continent Crude (Prairie)
Cents Per Gallon
Gasoline Stocks at Mid-Continent Refineries
Production
Shipments
Millions of Gallons
Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar Apr May June July Aug. Sept. Oct. Nov.
1927
1928

Prices shown above are extended to date shown in Refinery Market and Crude tables in Market section of this issue and stocks, shipments and Production are extended to date as shown in the table on the opposite page


Kerosene Stocks at Mid-Continent Refineries
Price of 41-43 W.W (Group 3) See Scale at Right
Shipments
Production
Millions of Gallons
Price In Cent Per Gallon
Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov.
1928

Gold medal to be awarded by I. O. M. A. for device adjudged most helpful

Prize for Most Helpful Equipment

CHICAGO, Sept. 29.—An award of merit is to be given by the Independent Oil Men of America to the equipment manufacturer who, during the last year, has designed and put on the market the device for the use of gasoline and oil marketers which is adjudged the most help to them in carrying on their business.

The award, a gold medal, is to be given at the convention in November of the Independent Oil Men of America. The medal is of gold, about 3 inches across. On its back will be an inscription giving the name of the winner, and telling why the medal is awarded to him.

"The great trend of discussion in the industry today is as to merchandising," stated an announcement from the I.O.M.A. in telling of the plan. "The Independent Oil Men of America wish to signalize that achievement which has been most helpful and meritorious in making it easier and better to serve the motoring public."

LOS ANGELES, Oct. 2.—J. C. Anderson has resigned as president of the Petroleum Securities Co. here, owned by the E. L. Doheny personal interests and probably will enter the oil business as an individual.

The eventual connection of Lima, Peru, with New York City, by air mail, is indicated by flying activities in South America and the Canal Zone. It will cut about two weeks from the present service time when put in operation. The south end of the proposed air mail route is now in operation between Lima, Peru, and Talar, Honduras. Air mail connections between New York City and Mexico City were opened officially Oct. 1. Other lines serving southern Mexico will also connect with the northern net work via Mexico City. The filling-in of the central gap will link up the proposed facilities.

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Mixed Carload in Drums—or Tank Cars

"INVINCIBLE" MOTOR OILS

"CASTOR-OI" (BEAN CASTOR BLEND) MOTOR OIL

100% Pennsylvania or Western Blends

To Match Any Oil Made

A. D. MILLER SONS' CO.

Millers Oil Refining Works

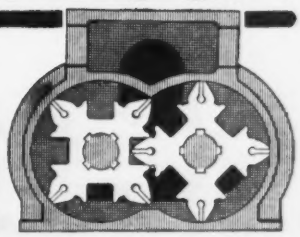
PITTSBURGH, PENNA.

Oldest Pennsylvania Refiners

NORTHERN

ROTARY

PUMPS



"MORE GALLONS PER HORSE POWER"

NORTHERN

DOUBLE PACKED

VALVES

BALANCED - LUBRICATED

CAN'T STAY STUCK - CAN'T KEEP LEAKING

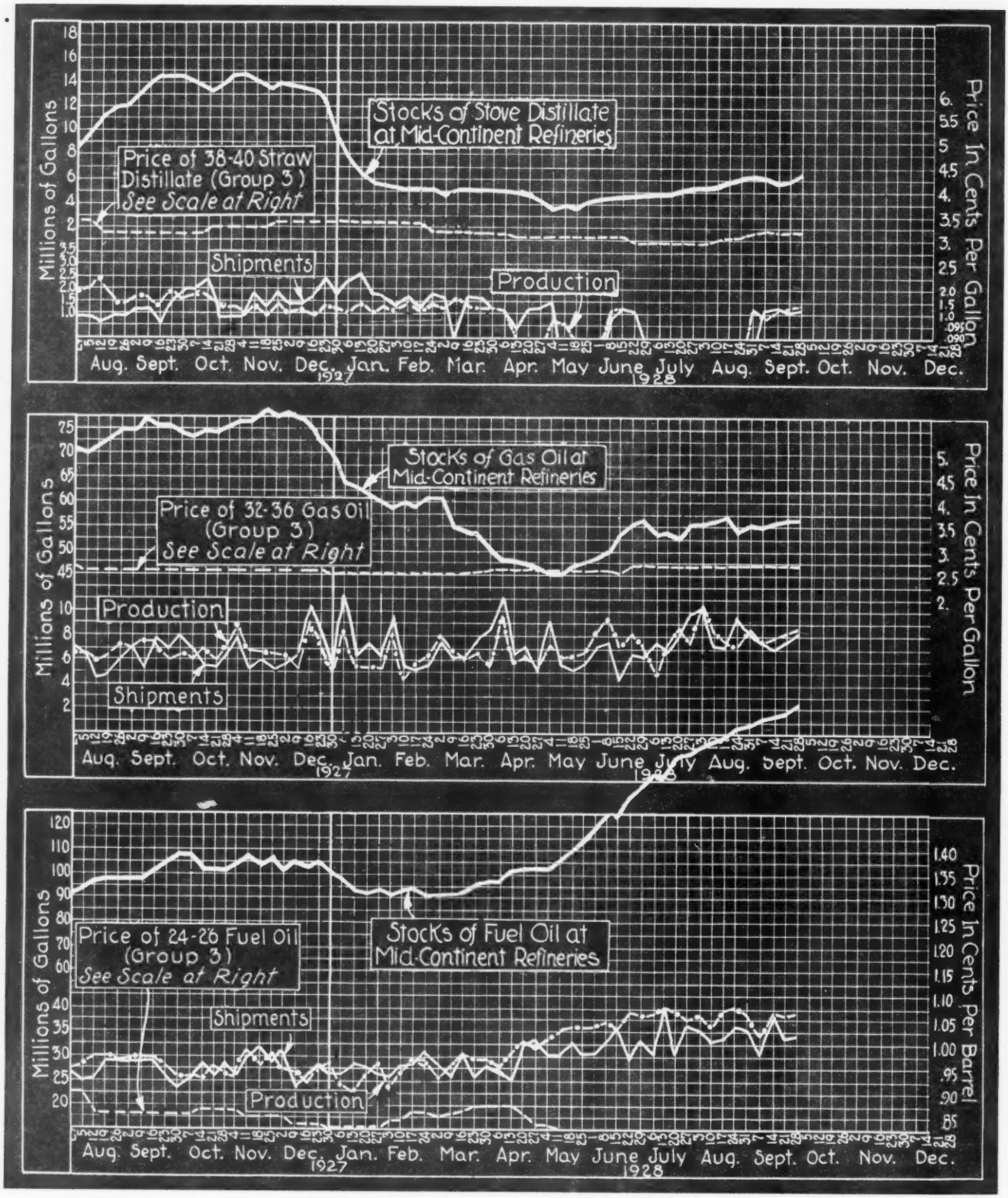
NORTHERN PUMP CO.

MINNEAPOLIS, MINN.

OFFICES IN ALL PRINCIPAL CITIES

Barometer of Mid-Continent Refinery Market
Week Ending September 28

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 82 Plants to National Petroleum News


Millions of Gallons
Price In Cents Per Gallon
Stocks of Stove Distillate at Mid-Continent Refineries
Price of 38-40 Straw Distillate (Group 3) See Scale at Right
Shipments
Production
Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.
1927
1928
Millions of Gallons
Price In Cents Per Gallon
Stocks of Gas Oil at Mid-Continent Refineries
Price of 32-36 Gas Oil (Group 3) See Scale at Right
Production
Shipments
Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.
1927
1928
Millions of Gallons
Price In Cents Per Barrel
Price of 24-26 Fuel Oil (Group 3) See Scale at Right
Stocks of Fuel Oil at Mid-Continent Refineries
Shipments
Production
Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.
1927
1928

Oklahoma Gasoline Market Holding Up Despite Lower Prices Elsewhere

Staff Special
TULSA, Sept. 29

THERE were few changes in Mid-Continent refined products prices for the week ended Sept. 29. Interest on gasoline business centered around Oklahoma, where prices have held steady, despite the fact that goods are moving from other territories at lower figures, some of it in competition to Group 3.

58-60 U. S. Motor gasoline sales in Oklahoma were made at 9.50 to 9.75 cents with the bulk of goods at the latter figure and a few sales reported above. Kansas prices remained the same but fractional decreases were noted in Texas, Louisiana and Arkansas. There was no export buying although two inquiries were entered in the Texas market.

Kerosenes held steady with a slight reduction of prices in Texas. The demand in other quarters was reported less brisk as the week progressed, with the exception of Louisiana where there is very little kerosene available.

In Kansas gas oil prices were slightly higher at the end of the week and a better demand for that product, and distillate, were noted in all areas. Fuel oils were being quoted at higher figures for October, although there were no changes in spot market prices.

Bright stocks, neutral and cylinder oils were still in good demand Sept. 29, despite the fact that cooler weather has been reported in most of the consuming territory. Wax sold at prices which prevailed during the week of Sept. 17-22 and most refiners reported they were sold up.

Natural gasoline prices dropped as demand fell off with the exit from the market of several large buyers who were purchasing two weeks ago.

Gasolines

Believing that the price of 58-60 U. S. Motor in Oklahoma was a barometer of their own gasoline activities in the future, Mid-Continent refiners turned their attention toward Group 3, charting the weighted average which stayed within a few hundredths of a cent of the 9.75-cent mark. It is the consensus of opinion among the larger refiners in the Mid-Continent that if the Oklahoma price holds they will have less trouble in marketing their own gasoline at present prices.

The spot gasoline movement in Oklahoma compared favorably with the past two or three weeks, the average of each day's sales approximating 75 cars. The demand was not as great as it has been but there was no goods in distress and refiners reported that their contract business was moving out promptly.

A better tone to the Group 3 market was noted the last two or three days of the week, due to the fact, refiners believe, that most of the small plants which had been offering 58-60 U. S. Motor at lower figures, were sold up and were not having to come into the open market to dispose of their goods. Some goods continued to move at lower figures on the Group 3 basis, coming from other territories, but it was mostly off-specifications, usually corrosive or with off-intermediates. One or two refiners said that they had encountered some blended goods that had moved as regular U. S. Motor, some of it being quoted as much as 1 cent below the Oklahoma U. S. Motor price.

Texas 58-60 U. S. Motor was selling at 9.125 to 9.25 cents Sept. 29, 0.125 cent below the price at which it opened the week. At the first of the week there had been very little domestic demand and some goods were in distress. Sept. 26, there was a sizable quantity moved domestic, resulting in a slightly firmer market.

The Texas situation is the result of inactivity of exporters and competition of goods moving from West Texas, which is refined from crude of high sulfur content and which has been selling from 1 to 1.50 cents below the Oklahoma market. Exporters were in the field twice during the week, on Sept. 25, seeking a quantity of 64-66, 375 e. p. gasoline and on Sept. 27, attempting to purchase a quantity of 60-62, 390 e. p. gasoline. A Wichita Falls refiner said that the first order was lost through cheaper bids from California, and the second because no refiner was willing to make the goods at 9.375 cents which was understood to have been the price exporters were offering. It was said that the California order was obtained 0.25 of a cent below the lowest Texas quotation.

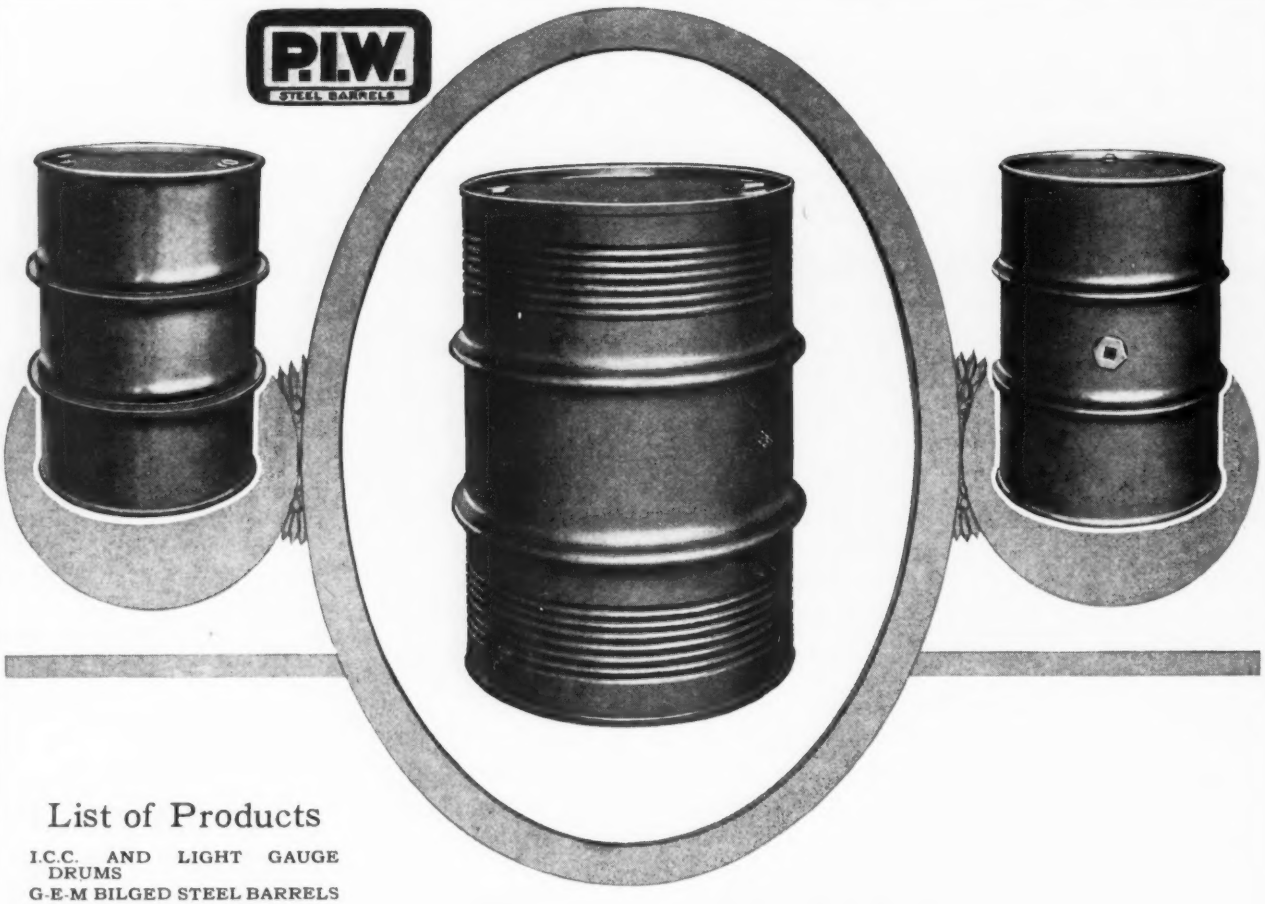
Arkansas and Louisiana prices declined 0.25 of a cent from 10 cents to 9.75 cents. Reports from both states were that there was not a great deal of demand and that refiners were having to meet competition from West Texas. Kansas prices held firm all week at 9.875 cents.

Refiners there say that demand continues fairly good and with few exceptions they are having no trouble in marketing their products at prevailing prices.

Virtually all sections in the Mid-Continent report a better demand for higher gravity gasolines. Prices have not been affected as yet, however.

Kerosene

In Texas, kerosene prices dropped off 0.25 to 0.375 of a cent. Other areas held to prices which have pre-



List of Products

I.C.C. AND LIGHT GAUGE DRUMS
G-E-M BILGED STEEL BARRELS
PENNSYLVANIA TANK CARS
STILLS 6" THICK WALLS
OIL REFINING EQUIPMENT
PRESSURE VESSELS
VACUUM VESSELS
AGITATORS
CHEMICAL PROCESSING EQUIPMENT
OIL STORAGE TANKS UP TO 120,000 BARRELS CAPACITY
ELEVATED WATER TANKS
PRESSURE PIPE LINES
PENSTOCKS
AUTOCLAVES
KILNS
DRYERS
ANNEALING BOXES
RETORTS
DIGESTERS
SPHERICAL VESSELS
BLAST FURNACE EQUIPMENT
CREOSOTING CYLINDERS
GALVANIZING KETTLES
EXCHANGERS
SMOKESTACKS
GENERAL STEEL PLATE CONSTRUCTION

STEEL BARRELS—

For petroleum products—
in any quantity—
at any time

P.I.W. facilities make possible the delivery of any quantity of containers for your particular product on short notice.

As color is playing an increasing part in helping the manufacturer make his product distinctive, P.I.W. is equipped to enamel its drums in any color you require. It will pay you to take advantage of this extra sales' assistance.

Write or call at our nearest branch office for further information.

Branch Plant—Beaumont, Tex.

THE
PETROLEUM IRON WORKS COMPANY
SHARON, PA.

NEW YORK
CHICAGO
HOUSTON
TULSA

vailed for more than two weeks and no particular weakness was noted with the exception of Oklahoma. Some of the Texas goods was marketed Group 3, refiners reported, and sold at less prices than Oklahoma goods. Prices remained steady, however, and Sept. 29 several refiners reported they were still sold up, some of them behind on shipments 4 and 5 days. 41-43 water white kerosene was selling Sept. 29, in Oklahoma, at 6.25 to 6.50 cents with reports of some high flash goods moving under the lower figure. Kansas 41-43 w. w. kerosene was being marketed at 6.875 to 7 cents; Louisiana, 7 cents flat and Arkansas, 42-44 grade at 7.25 cents.

Distillate and Gas Oil

Reports from all areas, with stress on Oklahoma, showed that a better demand was noted in distillate and gas oils with the proximity of cooler weather resulting in increased consumption. Prices were higher in Louisiana and Kansas, 0.125 to 0.25 of a cent in each instance. No changes were noted in the other areas.

Oklahoma refiners reported that they were having an especially good demand for furnace fuels running from 30 to 37 gravity, flash point around 200 degrees and of a straw color with a zero cold test. This particular brand of fuel, most refiners said, is used largely in home furnaces, must be free from sediment and have a sweet odor.

One Oklahoma refiner who markets this grade of goods, said that he started making it last year. This year when the weather in the consuming territory became cooler and home users of burning oils started contracting for their supply, he said he was literally besieged with orders and was forced to tell many of his regular customers that he would be unable to furnish any of the goods for a week or 10 days. Other refiners told a similar story relating to the demand.

Fuel Oils

There were no changes in fuel oil prices nor in the demand. Ideas of prices for over October varied among refiners, some of them believing there would be some strength shown in the market next month, while others believed that present prices would govern quotations. Some 18-22 grade has been quoted for over the month in Oklahoma at 60 cents a barrel which at present is the top of the spot market.

Neutral Oils, Cylinder Stocks, Wax

Prices which have governed neutral oils and cylinder stocks for the past several weeks were still in effect Sept. 29. The demand was reported good in most quarters and several refiners predicted a good movement over October, even though cooler weather usually retards the sale of those products.

There was very little wax available

(*Continued on Page* 119)

Chicago Resale Market

Gasoline Market Is Quiet

Staff Special
CHICAGO, Sept. 29

THE Chicago gasoline market passed a comparatively quiet week with few price changes of consequence occurring. The bulk of sales of U. S. Motor were at 9.50 to 9.75 cents. The majority of refiners continued to get 9.75 cents for their goods, while most of the 9.50 cent sales were by marketers. Most of them reported being able to buy goods for resale at around 9.25 cents in Oklahoma and 9.125 to 9.25 cents in Texas. Some inquiries were in the market for U. S. Motor gasoline for October shipment. Prices quoted on these inquiries were around .125 cent below the present spot market. The majority of refiners were refusing to quote over the month at anything under 9.75 cents.

Gasoline demand from contract buyers continued heavy, practically all sellers reported, while divergent reports were heard on spot demand. Several sellers reported a good demand; others said their business was only fair.

Jewett & Sowers Oil Co. was awarded the Chicago post office gasoline contract for the last quarter of 1928. This contract calls for approximately 290,000 gallons of U. S. Motor specification gasoline.

The contract was awarded on a basis of .125 cent above the average spot tank car price on date of shipment, plus a handling charge of .375 cent. A maximum price of 8.73 cents, f.o.b. Group 3, was specified.

Most sellers enjoyed a better demand for high test gasolines this week. The present cold spell brought jobbers into the market more actively than for some time. The bulk of this increased business was coming from the northern portions of the territory. Prices were generally unchanged over the week with a stronger tone apparent at the close. The 60-62, 437 e.p. grade moved mostly at 9.75 to 9.875 cents; 60-62, 400 e.p. at 10 to 10.25 cents and the 64-66, 375 e.p. grade at 10.75 to 11 cents, with some sales reported at lower prices.

Kerosenes were quiet in the Chicago market this week. Demand has slackened considerably although prices continued to hold up well. Several sellers reported that the late harvesting season in the northern states was keeping a fair number of inquiries coming in. The bulk of 41-43 w.w. grade moved all week at 6.25 to 6.375 cents, with sales also reported at 6.125 and 6.50 cents.

Furnace oils were getting an active play in most quarters this week. Distributors reported that householders were filling their tanks in goodly numbers and that demand so far this year was considerably larger than this time last season. Prices were generally unchanged over the week although several sellers advanced their quotations .125 cent.

The 38-40 straw distillate was moving mostly at 3.25 to 3.375 cents, with the majority of the trade asking the higher figure. Sales were reported up to 3.625 cents on this grade.

A good demand was reported for zero gas and fuel oils, while the higher cold test goods were not so active. Most sellers reported receiving about the usual number of industrial inquiries for next month's fuel requirements. Gas oils were unchanged in price throughout the week. The 32-36 ordinary dark grade sold at 2.50 to 2.625 cents; 32-36 dark zero at 2.625 to 2.75 cents and the 32-36 straw zero gas oil at 2.75 to 3 cents.

Fuel oils were generally unchanged in price throughout the week, with a stronger tone apparent in the lighter grades. The 28-30 zero fuel oil sold mostly at $0.875 to $0.90, with quotations up to $0.95. Ordinary 28-30 fuel moved at $0.825 to $0.85. Fuel of 24-26 gravity was at $0.65 to $0.675. The low sulfur 18-22 fuel continued to move mostly at $0.575 to $0.625, while the high sulfur goods moved at $0.525 to $0.55.

Correction

Due to error in telegraphic transmission, weighted average price of Oklahoma 58-60 U. S. Motor gasoline in the refinery market table of the Sept. 26 issue of NATIONAL PETROLEUM NEWS, page 108, was shown as 9.7083 cents. Price as of Sept. 24 should have been 9.7308 cents.

Prices of all grades of Oklahoma and North Texas natural gasolines as of Sept. 4 were correctly published in the refinery market table in the Sept. 12 issue of NATIONAL PETROLEUM NEWS, page 108. These correct prices for Sept. 4 were 9.25 to 9.75 cents for all grades. The Sept. 5 issue, page 122, showed these prices as 9.75 cents flat for all grades, except Grade C which was shown at 9.625 to 9.75 cents. Correction arrived too late to change prices in the Sept. 5 issue, but they were corrected in the Sept. 12 issue.

Refinery Markets on Light Oils and Lubricants

Prices given below are in cents per gallon, F. O. B. refinery, except where $ is shown

(These Refinery Prices compiled in the OIL PRICE HANDBOOK for a whole year)

GASOLINE AND NAPHTHA

PENNSYLVANIA	Prices Oct. 1	Prices Sept. 24	Prices Sept. 17
52-54 Naphtha	11.00 –11.75	11.50 –11.75	11.50 –11.75
54-56 Naphtha	11.00 –11.75	11.75	11.75
58-60 U.S. Motor 437 e.p.	11.75 –12.25	12.00 –12.50	12.00 –12.50
60-62 400-410 e.p. gasoline	12.25 –13.00	12.25 –13.00	12.50 –12.75
64-66 390 e.p. gasoline	13.50 –14.00	13.50 –14.00	13.50 –13.75
68-70 Str-run gas. 350-360 e.p.	13.50 –15.50	13.50 –16.00	13.50 –14.50
OHIO (Quotation of S. O. Ohio.)			
58-60 U.S.Motor, delivered in Ohio, tax to be added	12.50	13.00	13.25
OKLAHOMA			
48-50 540 e.p. naphtha	†9.00 – 9.125	†9.00 – 9.125	†9.00 – 9.125
50-52 450 e.p. naphtha	†9.00 – 9.125	†9.00 – 9.125	†9.00 – 9.125
56-58 450 e.p. gasoline	9.25 – 9.50	9.375– 9.50	9.375– 9.50
58-60 450 e.p. gasoline	9.375– 9.50	9.50	9.50
64-66 390 e.p. gasoline	10.50 –10.75	10.50 –10.75	10.50 –10.75
68-70 350-360 e.p. gasoline	11.25	11.00 –11.25	11.00 –11.25
OKLAHOMA (Weighted Average Prices)			
58-60 U.S. Motor, 437 e.p.	9.7358	9.7308	9.7475
60-62 437 e.p. gasoline	9.8750	9.9583	9.8929
60-62 400 e.p. gasoline	10.1667	10.4583	10.4375
64-66 375 e.p. gasoline	11.0000	11.0000	11.0000

In this issue, all above weighted average prices are effective on Monday on the dates shown at the top of the columns.

KANSAS (F. O. B. refinery Kansas destination)			
58-60 U.S. Motor 437 e.p.	9.875	9.875	9.875
60-62 400 e.p. gasoline	10.50	10.50	10.50
64-66 375 e.p. gasoline	11.00 –11.125	11.00 –11.125	10.75
NORTH TEXAS			
48-52 450 e.p. naphtha	†8.75	†8.75	†8.75
56-58 450 e.p. gasoline	†8.75	†8.75	†8.75
58-60 450 e.p. gasoline	†8.75 – 9.00	†8.75 – 9.00	†8.75 – 9.00
58-60 U.S. Motor 437 e.p.	9.125– 9.25	9.25	9.125– 9.25
60-62 400 e.p. gasoline	9.625– 9.75	9.75	9.75
64-66 390 e.p. gasoline	10.00	10.00 –10.25	10.00 –10.25
64-66 375 e.p. gasoline	10.25	10.25 –10.50	10.25 –10.50
68-70 350-360 e.p. gasoline	10.75	10.75 –11.00	10.75 –11.00
NORTH LOUISIANA (N. La., Ark. and Miss. destination)			
58-60 U.S. Motor gasoline	9.75	10.00	10.00
ARKANSAS (Arkansas destination only)			
56-58 450 e.p. gasoline	9.25	9.50	9.75
58-60 450 e.p. gasoline	9.50	9.50 – 9.75	10.00
58-60 U.S. Motor 437 e.p.	9.75	10.00	10.00
‡CALIFORNIA			
54-58 U.S. Motor 437 e.p.	9.00 –12.50	9.25 –12.50	9.50 –12.50
58-61 U.S. Motor 437 e.p.	10.00 –13.50	10.00 –13.50	10.00 –13.50
42-45 Eng. dis. 445-480 e.p.	7.00 – 8.00	7.00 – 8.00	7.00 – 8.00

‡3c tax to be added to California gasoline prices if used in state.

NATURAL GASOLINE

(Note: End point of all grades, not over 375 F. Corrosion test adopted Oct. 1, 1927; A.S.T.M. Method D130-27T; doctor test, July 2, 1928.)

OKLAHOMA			
Grade AA, 80-87.9, 90% Recovery	9.50 – 9.75	10.00 –10.125	9.00 – 9.25
Grade A, 72-79.9, 90% Recovery	9.50 – 9.75	10.00 –10.125	9.00 – 9.25
Grade BB, 84-92, 85% Recovery	9.50 – 9.625	9.75	9.00
Grade B, 76-83.9, 85% Recovery	9.50 – 9.625	9.75	9.00
Grade C, 80-92, 78% Recovery	9.50	9.50	8.75
NORTH TEXAS (F. O. B. Breckenridge)			
Grade AA, 80-87.9, 90% Recovery	9.625– 9.75	10.125	9.125– 9.25
Grade A, 72-79.9, 90% Recovery	9.625– 9.75	10.125	9.125– 9.25
Grade BB, 84-92, 85% Recovery	9.625	9.875	9.00
Grade B, 76-83.9, 85% Recovery	9.625	9.875	9.00
Grade C, 80-92, 78% Recovery	9.50 – 9.625	9.625	8.75
NORTH LOUISIANA (F. O. B. Monroe District)			
Grade AA	†10.25 –10.375	†10.50	†9.50
Grade BB	†10.00 –10.25	†10.25	†9.25
Grade C	†9.75 –10.00	†10.00	†9.00
CALIFORNIA			
75-85, 375-390 e.p. blend	7.00 – 7.50	7.00 – 7.75	7.00 – 7.50

MOTOR FUEL BLENDS

OKLAHOMA			
64-66 Blend 437 e.p.	9.25	9.25	9.25 – 9.50

BURNING OILS

PENNSYLVANIA			
45 w.w. kerosene	7.50 – 8.00	7.75 – 8.25	7.75 – 8.25
46 w.w. kerosene	8.00 – 8.75	8.125– 9.00	8.125– 9.00
47 w.w. kerosene	8.25 – 9.00	8.50 – 9.25	8.50 – 9.25
300 mineral seal	7.50	7.50 – 7.75	7.50 – 7.75
OKLAHOMA			
41-43 w.w. kerosene	6.25 – 6.50	6.25 – 6.50	6.25 – 6.50
42-44 w.w. kerosene	6.75 – 7.00	6.75 – 7.00	6.75 – 7.00
KANSAS (F. O. B. refinery Kansas destination)			
41-43 w.w. kerosene	6.875– 7.00	6.875– 7.00	6.875– 7.00
42-44 w.w. kerosene	7.25	7.25	7.25
NORTH TEXAS			
40-42 w.w. kerosene	5.75 – 5.875	5.875– 6.00	5.875– 6.00
41-43 w.w. kerosene	5.875– 6.00	6.00 – 6.25	6.125– 6.25
NORTH LOUISIANA (N. La., Ark. and Miss. destination)			
41-43 w.w. kerosene	7.00	7.00	7.00
ARKANSAS (Arkansas destination only)			
42-44 kerosene	7.25	7.25	7.25
CALIFORNIA			
38-40 w.w. kerosene	6.00 – 6.50	5.75 – 6.50	5.75 – 6.50

NEUTRAL OIL

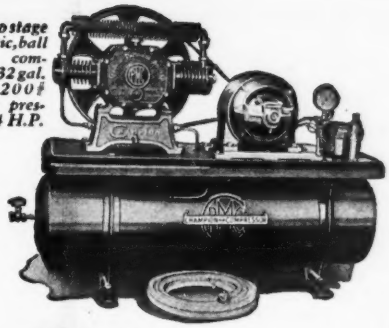
PENNSYLVANIA Vis.		(Viscosity at 70°F.)	
200 No. 3 Assoc. Filt.	30.00 –32.00	30.00 –32.00	30.00 –32.00
180 No. 3 Assoc. Filt.	27.00 –29.00	27.00 –29.50	28.50 –30.00
150 No. 3 Assoc. Filt.	23.50 –25.00	23.50 –25.00	24.00 –26.00
	(Non Viscous)		
34 Grav. 330-340 Flash	7.50 – 8.00	6.75 – 9.00	6.75 – 9.00
36 Min. Neut., 300-305 Flash	6.75 – 8.50	6.00 – 8.50	6.00 – 8.50
****OKLAHOMA** Vis. Color		(Viscosity at 100°F.)	
100—No. 2	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50
150—No. 3	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
150—No. 4	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
180—No. 3	9.00 –10.00	9.00 –10.00	9.00 –10.00
180—No. 4	9.50 – 9.75	9.50 – 9.75	9.50 – 9.75
180—No. 5	9.25 – 9.75	9.25 – 9.75	9.25 – 9.75
200—No. 3	9.625–11.00	9.625–11.00	9.625–11.00
200—No. 4	9.50 –10.75	9.50 –10.75	9.50 –10.75
200—No. 5	8.50 –10.00	8.50 –10.00	8.50 –10.00
220—No. 3	12.50 –13.50	12.50 –13.50	12.50 –13.50
220—No. 4	12.25 –12.50	12.25 –12.50	12.25 –12.50
220—No. 5	11.50 –12.00	11.50 –12.00	11.50 –12.00
240—No. 3	13.50 –14.00	13.50 –14.00	13.50 –14.00
240—No. 4	13.25 –13.50	13.25 –13.50	13.25 –13.50
240—No. 5	12.00 –13.00	12.00 –13.00	12.00 –13.00
280—No. 3	15.50 –16.50	15.50 –16.50	15.50 –16.50
280—No. 4	15.25	15.25	15.25
280—No. 5	14.00 –15.00	14.00 –15.00	14.00 –15.00
300—No. 5-6	17.00	17.00	17.00
GULF COASTAL Vis. Color		(Viscosity at 100°F., pour test 0)	
100—No. 2 Unfilt. Pale	7.00 – 7.50	7.00 – 7.50	7.00 – 7.50
200—No. 3 Unfilt. Pale	10.00 –10.75	10.00 –10.75	10.00 –10.75
300—No. 3 Unfilt. Pale	11.00 –11.75	11.00 –11.75	11.00 –11.75
500—No. 3½ Unfilt. Pale	12.50 –13.50	12.50 –13.50	12.50 –13.50
750—No. 4 Unfilt. Pale	15.50 –16.00	15.50 –16.00	15.50 –16.00
200—No. 5½ Red Oil	8.25 – 8.75	8.25 – 8.75	8.25 – 8.75
300—No. 5½ Red Oil	9.00 – 9.75	9.00 – 9.75	9.00 – 9.75
500—No. 6 Red Oil	10.50 –11.25	10.50 –11.25	10.50 –11.25
750—No. 6 Red Oil	13.50 –14.00	13.50 –14.00	13.50 –14.00
CALIFORNIA Vis. Color		(Viscosity at 100°F.)	
100—No. 3	9.75 –10.00	9.50 –10.00	9.50 –10.00
200—No. 3	11.50 –12.00	11.50 –12.00	11.50 –12.00
300—No. 3	13.00 –13.50	13.00 –13.50	13.00 –13.50
450—No. 3	15.50 –16.00	15.50 –16.00	15.50 –16.00
550—No. 3	16.50 –17.00	16.50 –17.00	16.50 –17.00
600—No. 3	17.00 –17.50	17.00 –17.50	17.00 –17.50
200—No. 5	11.00 –11.50	11.00 –11.50	11.00 –11.50
300—No. 5	12.00 –12.50	12.00 –12.50	12.00 –12.50
400—No. 5	14.00 –14.50	14.00 –14.50	14.00 –14.50
500—No. 5	15.00 –15.50	15.00 –15.50	15.00 –15.50
600—No. 5	16.00 –16.50	16.00 –16.50	16.00 –16.50
700—No. 7	18.00 –18.50	18.00 –18.50	18.00 –18.50

CYLINDER STOCKS

****OKLAHOMA**			
190-200 Vis.at 210° Brt. St.	31.00 –32.00	31.00 –32.00	31.00 –32.00
150-160 Vis. at 210° Brt. St.	26.00	26.00	26.00
600 E. St. 140-150 Vis.-210°	17.00 –18.00	17.00 –18.00	17.00 –18.00
600 St. Ref. Olive Green	8.00 –10.00	8.00 –10.00	8.00 –10.00
600 St. Ref. Dark Green	6.00 – 8.00	6.00 – 8.00	6.00 – 8.00
Black Oil	5.00	5.00	5.00
PENNSYLVANIA		(1-inch Immersion Test)	
600 Steam Refined	13.50 –14.50	13.50 –14.50	13.50 –14.25
650 Steam Refined	15.00 –16.50	15.00 –17.50	15.00 –16.50
600 Flash	18.50 –19.00	18.00 –18.75	18.50 –19.00
625 Flash	28.50 –29.00	28.00	28.00 –28.50
600 Warren E	19.50 –20.00	19.00 –20.00	19.00 –20.00
600 Oil City E	17.00 –17.50	17.00 –18.50	17.00 –18.50
600 D Filtered	24.00 –24.50	23.00 –24.00	††24.00
Cold Test Stock, 40-50p. p., 140-150 vis. at 210° 540-550 flash, No. 8 color	36.00 –37.00	36.00 –37.00	36.00 –36.50
40-50 p.p., 140-150 vis. at 210°, 540-550 flash, No. 6-6½ color diluted	34.00 –35.00	34.00 –35.00	34.00 –34.50

†Prices nominal ††Only one refiner quoting *Quotations only

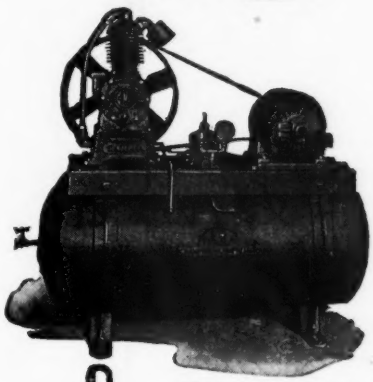
**Represents both sales and quotations



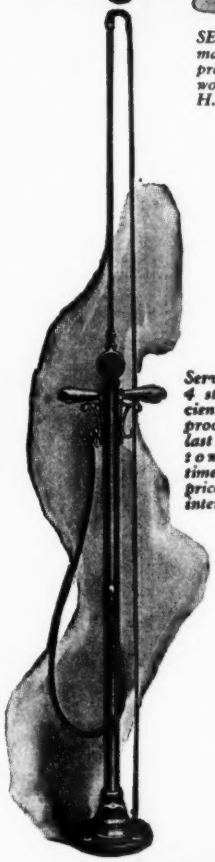
N-13, two stage automatic, ball bearing compressor. 32 gal. tank, 200# working pressure. 3/4 H.P.

CHAMPION

Automatic Air Compressors



SE-26, single stage, automatic, ball bearing compressor. 60 gal. tank, 150# working pressure. 1½ H. P.



Service Towers—4 styles — efficient, sturdy, fool proof—will outlast the ordinary tower many times. Sold at a price that will interest you.

OE - 41, two stage, automatic, ball bearing, 2 cylinder, vertical compressor. 60 gal. tank, 200 lbs. working pressure. 3 H. P.

In this type of compressor, vertical—2-cylinder, Champion again is the pioneer in offering a two stage, automatic equipment especially adapted for the larger service stations, repair shops, garages, etc., where high pressure, large volume air is required for the operation of — in addition to tire inflation— high pressure greasing systems, air lifts, gasoline pumps, air tools, etc. May be used for paint spraying by the simple installation of a reducing valve in the paint air line.

Equipment includes—ball bearing compressor with fan fly-wheel, clear vision oil gauge, filtering trap, check valve, safety valve, air gauge, automatic electric controller, automatic pressure unloader, belt, motor with adjustable sliding motor rail, to permit easy belt adjustment; all mounted on steel base, tank, needle valve, 25' air hose and chuck with fittings all complete ready to run when wired to electric current. Equipments with 2 or 3 phase motors have cut-out box with protective plugs. D.C. equipments have automatic starters—time limit acceleration.

There is a type of Champion air compressor to fit every need. They are all automatic — ball bearing equipped — and built in a wide range of sizes in both two stage and single stage types.

Champion also builds Car Washers and Paint Spray Units

CHAMPION

PNEUMATIC MACHINERY COMPANY

8168 South Chicago Avenue - - - Chicago, Illinois, U. S. A.

Refinery Markets on Wax and Heavy Oil Products

Prices given below are in cents per gallon, F. O. B. refinery, except where $ is shown

(For quick reference to Refinery Prices, get the OIL PRICE HANDBOOK, published annually)

WAX

PENNSYLVANIA	Prices Oct. 1	Prices Sept. 24	Prices Sept. 17
Per pound, New York			
122-124 white crude scale	5.375– 5.75	5.375– 5.75	5.50 – 5.75
124-126 white crude scale	5.50 – 5.75	5.50 – 5.75	5.50 – 5.75
OKLAHOMA			
**124-126 White Crude Scale	5.00 – 5.25	5.00 – 5.25	5.00 – 5.125
CALIFORNIA			
White crude scale, per pound, ton lots	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50

FUEL OIL

PENNSYLVANIA			
36-40 fuel oil	4.50 – 4.75	4.50 – 4.75	4.50 – 4.75
30-34 fuel oil	4.25 – 4.375	4.25	4.25
28-32 fuel oil	4.125– 4.25	4.125	4.125
OKLAHOMA			
38-40 straw distillate	3.25 – 3.37	3.25 – 3.375	3.25 – 3.375
36-38 straw distillate	3.00 – 3.125	3.00 – 3.125	3.00 – 3.125
32-36 gas oil, straw	†2.625– 2.75	†2.625– 2.75	†2.50 – 2.75
32-36 dark gas oil	2.375– 2.50	2.375– 2.50	2.375– 2.50
28-30 fuel oil (in bbls.)	$0.85 – 0.875	$0.85 – 0.875	$0.85 –$0.875
26-28 fuel oil (in bbls.)	$0.675– 0.725	$0.675– 0.725	$0.675–$0.725
24-26 fuel oil (in bbls.)	$0.65 – 0.675	$0.65 – 0.675	$0.65 –$0.675
22-26 fuel oil (in bbls.)	$0.575– 0.625	$0.575– 0.625	$0.575–$0.625
18-22 fuel oil (in bbls.)	$0.55 – 0.60	$0.55 – 0.60	$0.55 –$0.60
16-18 fuel oil (in bbls.)	$0.55	$0.55	$0.55
14-16 fuel oil (in bbls.)	$0.55	$0.55	$0.55
KANSAS (F. O. B. refinery Kansas destination.)			
38-40 straw distillate	3.50 – 3.625	3.50 – 3.625	3.50 – 3.625
36-38 straw distillate	3.25 – 3.375	3.125– 3.375	3.125– 3.375
32-36 gas oil	2.75 – 2.875	2.625– 2.75	2.625– 2.75
24-26 fuel oil	*$0.75 – 0.80	*$0.75– 0.80	*$0.75 –$0.80
18-22 fuel oil	*$0.70	*$0.70	*$0.70
NORTH TEXAS			
38-40 straw distillate	3.125– 3.375	3.125– 3.375	3.125– 3.375
32-36 gas oil, cracked	2.375– 2.50	2.375– 2.50	2.375– 2.50
32-36 St. reduced gas oil	2.375– 2.50	2.375– 2.50	2.375– 2.50
24-26 fuel oil (in bbls.)	$0.55 – 0.575	$0.55 – 0.575	$0.55 –$0.575

†Prices Nominal ††Only One Refiner Quoting *Quotations only

GULF COASTAL	Prices Oct. 1	Prices Sept. 24	Prices Sept. 17
Fuel (in bbls.)	$1.20 –$1.25	$1.20 –$1.25	$1.20 –$1.25
Gas oil	4.375– 4.50	4.25 – 4.375	4.25 – 4.375
NORTH LOUISIANA (N. La., Ark. and Miss. destination)			
32-36 gas oil, dark	2.75 – 3.00	2.625– 2.875	2.625– 2.875
32-36 gas oil, straw	2.875– 3.125	2.75 – 3.00	2.75 – 3.00
16-20 fuel oil (in bbls.)	$0.70	$0.70	$0.70
ARKANSAS (Arkansas destination only)			
32-36 gas oil, straw	3.00 – 3.25	3.00 – 3.25	3.00 – 3.25
32-36 gas oil	2.75 – 3.00	2.75 – 3.00	2.75 – 3.00
28-32 gas oil	2.75	2.75	2.75
Road Oil	....	....	$1.15
CALIFORNIA (F. O. B. San Joaquin Valley. At San Francisco, 4c per bbl. more)			
14-18 fuel oil (in bbls.)	$0.65 –$0.70	$0.65 –$0.70	$0.65 –$0.70
14-18 Bunker oil (in bbls.)	$0.80 –$1.00	$0.80 –$1.00	$0.80 –$1.00
30-34 gas oil (in bbls.)	$1.00 –$1.20	$1.00 –$1.20	$1.00 –$1.20
27 Plus Diesel oil (in bbls.)	$0.90 –$1.00	$0.90 –$1.00	$0.90 –$1.00

PETROLATUMS

PENNSYLVANIA (In barrels, carload lots, f.o.b. refinery. In tank cars 5/8c to 3/4c per pound less.) Quotations of only one refiner on all grades except red petrolatum which is quoted by two refiners.

Snow White	8.625	8.625	8.625
Lily White	7.625	7.625	7.625
Cream White	6.625	6.625	6.625
Light Amber	3.625	3.625	3.625
Amber	3.375	3.375	3.375
Red	2.375– 3.125	2.375– 3.125	2.375– 3.125

PETROLEUM COKE

****OKLAHOMA**

(Per ton in car lots)

Lump	$4.50 – 5.00	$4.50 – 5.00	$4.50 –$5.00
Still run	$3.00	$3.00	$3.00
Breeze	$2.00	$2.00	$2.00

****Represents Both Sales and Quotations**

California Refinery Market

Export Gasoline Moves Slowly

Staff Special

LOS ANGELES, Sept. 29

THE gasoline export market in California the past week was very dull with no material change in quotations, although it was generally understood in marketing circles that some California U. S. Motor could still be purchased at 8.50 to 9 cents.

Most of the orders placed in recent weeks for this grade of motor fuel were handled through New York offices of certain marketing companies. Gasoline, 375 end point, is held at about 11.50 cents at San Pedro.

Gasoline for shipment outside of the state is slightly stronger with most of the refiners asking from 9 to 9.50 cents, while a few of the major companies are refusing to quote less than 10 cents. Gasoline for shipment to points within the state is held fairly firm at 12.50 cents tax to be added. The clearing up of the retail cut price situation in California has had much to do with stronger tank car prices.

Kerosene continues to be scarce with the refiners asking from 6.50 to 7 cents in tank car lots, although they are not anxious for this business. Some of the plants quote as high as 7.50 cents.

The export price continues to hold around 5.50 to 6 cents.

The fuel oil market continues to be extremely quiet but the refiners appear to be holding firmly to previous quotations, expecting the fall and winter business to be even better than last season.

The production of natural gasoline is holding up, but due to the fact that approximately 95 per cent of the total production is under term contracts, the supply of spot stuff is held firmly at 7 to 7.50 cents. One of the major refiners recently offered a few cars at 7 cents.

The export crude market is showing some renewed strength in spite of the large production at Long Beach and the expected large production at Santa Fe Springs. One buyer the past week found a few cars at 10-cent premium but it was doubted if much refinable crude could be purchased under 15 cents premium.

Gas oil, diesel oil and other products show no change.

LOS ANGELES, Sept. 29.—General Petroleum Corp. announces a new gasoline to be known as Violet Ray, claimed to have high anti-knock qualities, and without dope. It is said to be sulfurless and is quick starting. It is not to be sold at premium price.

BERLIN, Oct. 1.—Prof. Dr. Fritz Frank of Berlin, a world renowned chemist, celebrated his 60th birthday on Sept. 27. He is a nephew of Adolf Frank, also a noted chemist. After the war he was appointed to the direction of the Institute for Brown Coal and Mineral Oil Chemistry. In addition to this he was honorary professor in a technical high school at Charlottenburg.

LOS ANGELES, Sept. 28.—J. E. Kobernik, member of the firm of Engineering Research & Equipment Corp., in charge of the company's office at Dallas, Tex., spent several days the latter part of September at the company's headquarters in Los Angeles.

Pennsylvania Refinery Market

U. S. Motor Is 11¾—12¼ Cents

CLEVELAND, Oct. 1.—U. S. Motor gasoline spot quotations dropped 25 cents in western Pennsylvania market with the beginning of October. Refiners last week were quoting U. S. Motor over October at 11.75 to 12 cents. Some refiners continued to quote 12.25 cents today for spot.

Quotations on cylinder stocks, bright stocks and viscous neutrals were unchanged generally last week. Refiners continued to quote 36 to 37 cents on light bright stock and 34 to 35 cents on dark bright. Demand was reported good.

More refiners are reporting increased inquiries for fuel oils. Some sellers have advanced their quotations on 30-34 and 28-32 fuel oil .125 cents.

Oklahoma Gasoline Holds; Other Areas Lower

(*Continued from Page* 115)

for immediate shipment and refiners' ideas of prices were generally placed at 5 to 5.25 cents for bag and barrel shipments. Wax in tank cars would move around 4.75 cents most refiners believed, although there is a comparatively small amount marketed from Oklahoma by that method.

Natural Gasolines

Natural gasoline prices continued to decline Sept. 29, with manufacturers quoting 0.125 to 0.25 of a cent lower than the prices which were in effect Sept. 28. There was very little domestic demand and virtually no export business. In Oklahoma grades A and AA were selling at 9.75 to 9.875 cents, B and BB at 9.50 to 9.625 cents and grade C at 9.50 cents. One seller Sept. 28, sold 15 cars of Grade C at 9.50 cents, the buyer informing him after the purchase was made that he had found a hard time locating the material.

Texas prices were 0.125 of a cent better than those in Oklahoma, due largely to the fact that material there takes a better freight rate to the east than Oklahoma goods, where a considerable quantity is being shipped at present. About the middle of the month several large Eastern buyers were in the market and contracted for goods, the most of which is moving from Texas.

Louisiana natural gasolines were moving approximately 0.50 cent above Oklahoma prices. Most of the material offered in that territory is sold on contract.

Wax Market

Wax Is Easier

NEW YORK, Sept. 29.—Wax markets eased off slightly the past week. Foreign buying has failed to pick up materially and again the offerings from resale agents, at prices considerably under those of refiners, became so numerous they virtually governed the current market.

Trading was exceptionally quiet. Two distress cars of white crude scale were reported sold out of Philadelphia on the basis of 4.875 cents and 5 cents, New York. Goods were by no means freely available at these prices. Most resale agents were asking from 5.125 to 5.25 cents with refiners 0.125 to 0.25-cent higher. There was considerable short selling reported done in an effort to beat down the market.

Fully refined waxes were generally unchanged in price, although in this section of the market also offerings at 0.125-cent under prices quoted by refiners were coming from resale agents. The high melting point grades, however, were reported to be in firm hands at 7.25 cents for 133-135 A.m.p. and 7.75 cents for 135-137 A.m.p.

The New Orleans market was quiet. White crude scale was offered there at 5 to 5.125 cents a pound.

Buys Moody Oil Properties

HOUSTON, Oct. 1.—Superior Oil Co. of Tulsa, control of which was recently purchased from Atlantic Refining Co. in a reorganization carried forward by Naphen & Co., has acquired the Howard county, Texas, properties of Moody Oil Corp., of Houston. The Howard properties, in the Roberts-Settles deep lime area, consists of the 50 per cent interest previously owned by the Moody Corp., with the F. H. E. Oil Co., of Sherman. Under proration gages recently taken the F. H. E.—Moody potential production was rated at 6292 barrels daily.

LOS ANGELES, Sept. 28.—Associated Oil Co. is distributing a small booklet entitled "The Presidency of the United States of America." The booklet lists all presidents of the United States, explains the relative strength of states in the electoral college and gives other information having to do with a general election.

Frank T. Pickrell, president of the Texon Oil & Land Co. and W. A. Moncrief, former vice-president of the Marland Oil Co. of Texas, stopped in Tulsa Wednesday en route from Ponca City to St. Louis.

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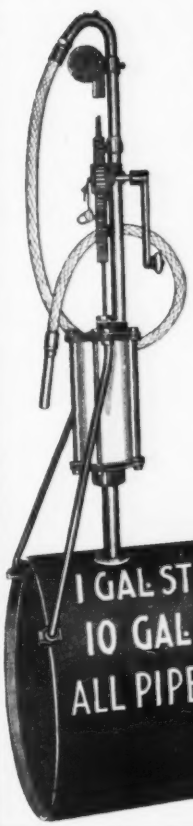

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New York Domestic Market

Gasoline Down and Kerosene Up

Staff Special
NEW YORK, Sept. 29

DECLINING gasoline markets and a sudden revival of activity in burning oils were the high lights in eastern tank car markets the past week. Price reductions for the former commodity were not general, but they were sufficient to mark the turning point in the market. Burning oils, through failing to advance materially in price, were traded in extensively.

The winterlike temperatures which spread over northern Atlantic seaboard states the early part of the week stimulated such activity in burning oils that many sellers reported their facilities were heavily taxed in coping with the situation. The abnormally cold weather—about six weeks ahead of the season—came on so suddenly that it caught many of the trade unprepared.

Not that stocks of burning oils along the seaboard are low, but the point stressed was that shipments could not be made as fast as dealers required.

Several sellers reported making fractional advances in prices but for the most part both high and low gravity oils were offered at the price levels which have prevailed for several weeks. Most sellers were quoting gas oil, gravity anywhere from 28 to 36, at around 4.75 to 5 cents. Furnace oil, 36-40 gravity, was quoted largely at 6 cents. One large seller of the latter grade said orders were so numerous the forepart of the week that he advanced his price 0.25-cent to 6.25 cents a gallon, but this action, he said, effected little or no let-up in demand.

A spell of warmer weather is bound to come before winter weather sets in for good, but the burning oil season has gotten off to a good start and the trade generally was most optimistic over the prospects for the coming season.

Distress offerings of gasoline as many of the trade were inclined to term them, became so frequent the early part of this week, that several large sellers in New York harbor openly reduced their prices to meet the competition, which, it was asserted, was coming largely from resale agents.

Spot demand for gasoline from the jobbing trade failed to show any material improvement. In fact, a number of sellers stated they were having a good deal of trouble in getting shipping instructions on monthly contract stuff.

U. S. Motor gasoline was offered in several sources at 11.50 cents the forepart of the week and sellers quoting these prices reported receiving a fair volume of orders for short hauls. Lower competition developed, however, as the week advanced and goods was thereupon offered at 11.25 cents by those who had been quoting 11.50 cents. Most of the big companies were reluctant to lower their prices and accordingly maintained their quotations at 11.75 cents. A number of them reported they were in hopes of getting shipping instructions on September goods but not announcing October prices until next week.

Price reductions in the Philadelphia market were more general. All companies with but one exception reduced their prices for regular U. S. Motor gasoline to 11.50 cents on Wednesday and Thursday. The two large sellers of California gasoline in the Philadelphia district likewise reduced their prices to 11.50 cents, naming this figure for either spot or over October. California gasoline was reported sold at 11.25 cents in the Philadelphia district, but a careful check of this market revealed the reports were without foundation.

Prices at Baltimore were unchanged at 11.75 cents for both regular U. S. Motor and California U. S. Motor. Persistent rumors were circulated to the effect that California gasoline was freely available at Baltimore at 11.50 cents. A careful check of this situation likewise revealed that goods sold at this price was small in volume, comparatively speaking, and not representative of the general market. One large seller of California gasoline at Baltimore reported he had taken on one 10-car order at 11.50 cents but at the same time he had sold in the neighborhood of 100 cars at 11.75 cents during the period in question.

New England and southern seaboard markets were generally unchanged with sellers pretty much in accord in their quotations for spot gasoline.

Better demand was noted for kerosene this week and relative scarcity of goods available for prompt shipment caused several refiners in the Philadelphia district to advance their prices to 9 cents. Water white was still available in this market in one or two quarters at 8.50 cents. Major sellers of kerosene at New York harbor and Baltimore also were maintaining their quotations at 8.50 cents.

Gulf Export Market

Foreign Buying Slows Up

Staff Special
NEW YORK, Sept. 29

SEVERE recessions in gasoline prices were the feature in export markets at the Gulf the past week. Foreign inquiry for nearby deliveries continued fairly active but actual purchases were few—in fact the week ended with but one open market light oil transaction having been closed.

Foreign buyers have assumed a different attitude recently in view of the easy tanker market that prevails. It is generally admitted that stocks of gasoline abroad are comparatively low. Evidence of this fact is seen in the type of inquiries that have been circulated through the market the past three weeks. Most of them have specified loading within 20 or 30 days.

With any amount of clean bottoms virtually going begging for Continental trade, however, buyers have not been forced to charter 60 days ahead, as has been usual in the past. And for this reason they have been safe in deferring their purchases until the latest possible moment.

The French inquiry closed late this week was particularly interesting from the foregoing angle. The buyer first entered the market last week for approximately 50,000 barrels of U. S. Motor and 64-66, 375 end point gasoline for October-November loading at the Gulf. Unsuccessful at that time in obtaining prices sufficiently attractive, he changed his inquiry, specifying a part cargo of the latter grade only, and if possible he wanted material in transit. This he was unable to secure.

His final purchase was more nearly in line with his original inquiry. It was reported four companies quoted approximately the same prices for U. S. Motor and 64-66, with the business finally going to a company in position to ship from a north Atlantic port the latter part of October. The buyer's action in the matter indicated the urgency of his need for material.

On the basis of the Gulf, U. S. Motor gasoline in this transaction sold at 9.375 cents and 64-66 at 11.125 cents. On the former com-

(*Continued on Page* 124)

Complete Seaboard Market

(Export markets for whole year given in OIL PRICE HANDBOOK. Each volume carries refinery, tank wagon, crude and export markets—complete for the whole year)

Eastern Domestic Market

(Prices for tank car lots, f. o. b. refinery or seaboard terminal, representing majority of quotations.)

U. S. MOTOR GASOLINE	Oct. 1	Sept. 24	Sept. 17
New York harbor	11.25 –11.75	11.50 –11.75	11.75
Portland district	†12.25 –12.75	†12.25 –12.75	†12.25 –12.75
Boston district	*12.25	*12.25	*12.25
Providence district	*12.25	*12.25	*12.25
Philadelphia district	11.50	11.75	11.75 –12.00
Baltimore district	11.75	11.75	11.75
Norfolk district	11.75	11.75	11.75
Charleston district	11.50	11.50	11.50
Savannah district	11.25	11.25	11.25
Jacksonville district	11.00 –11.25	11.00 –11.25	11.00 –11.25
CALIFORNIA U. S. MOTOR GASOLINE			
New York harbor	11.75	11.75	11.75 –12.00
Philadelphia district	11.50	11.75	11.75
Baltimore district	11.75	11.75	11.75
WATER WHITE KEROSENE			
New York harbor	8.50	8.50	8.50
Philadelphia district	9.00	8.50	8.50
Baltimore district	8.50	8.50	8.50
GAS OIL: 28-34 Gravity			
New York harbor	4.75 – 5.00	4.75 – 5.00	4.75 – 5.00
Boston district	4.75 – 5.00	4.75 – 5.00	4.75 – 5.00
FURNACE OIL: 36-40 Gravity			
New York harbor	6.00 – 6.25	6.00	6.00
Boston district	6.00 – 6.25	6.00 – 6.25	6.00 – 6.25
GRADE C BUNKER OIL			
New York harbor	$1.05	$1.05	$1.05
Boston district	$1.05	$1.05	$1.05
DIESEL OIL			
New York harbor	$2.00	$2.00	$2.00
MEDICINAL OILS, RUSSIAN			
885-890 s.g., 325-330 vis.	$0.80 – 0.90	$0.80 –$0.90	$0.80 –$0.90
870-875 s.g., 150-155 vis.	$0.67 – 0.77	$0.67 –$0.77	$0.67 –$0.77
860-865 s.g., 80-85 vis.	$0.65 – 0.75	$0.65 –$0.75	$0.65 –$0.75

Note: Above prices do not include inspection tax levied in some states.
*Minimum of 13.50 cents delivered.
†13.50 to 14 cents delivered.

New York Export Market

(Gasoline and kerosene in cases in bulk. Lubricating oils are per gal. in bbls. Cylinder oils are Penna. products)

	Oct. 1	Sept. 24	Sept. 17
U. S. Motor gasoline	26.90	26.90	26.90
43-45 150 w.w. kerosene	18.65	18.65	18.65
42-44 110 s.w. kerosene	17.40	17.40	17.40
CYLINDER OILS			
Bright stock, dark	43.00 –44.00	43.00 –44.00	42.00 –43.00
600 D filtered	30.00 –32.00	30.00 –32.00	31.00 –32.00
600 Warren E filtered	26.00 –27.00	26.00 –27.00	26.00 –27.00
600 s.r. unfiltered	20.00 –21.00	20.00 –21.00	21.00
650 s.r. unfiltered	22.50 –24.00	22.50 –24.00	22.50 –23.00
600 flash, s.r.	26.00	26.00	26.00
630 flash, s.r.	35.00 –36.00	35.00 –36.00	34.00 –36.00
RED ENGINE OILS (Vis. 100°)			
300 vis. No. 6½ color	19.50	19.50	19.50
250 vis. No. 6 color	18.50	18.50	18.50
200 vis. No. 6 color	18.00	18.00	18.00
PALE ENGINE OILS (Vis. 100°)			
230 vis. No. 3¾ color	23.50	23.50	23.50
180 vis. No. 3¼ color	19.50	19.50	19.50
100 vis. No. 2¼ color	15.50	15.50	15.50
MOTOR OILS (Vis. 100°)			
600 vis. No. 7 color	34.50	34.50	34.50
500 vis. No. 6½ color	32.50	32.50	32.50
400 vis. No. 7¼ color	30.50	30.50	30.50
300 vis. No. 6 color	29.50	29.50	29.50
200 vis. No. 3¼ color	20.00	20.00	20.00
MEDICINAL OILS			
875-885 s.g.	$0.80	$0.80	$0.80
865-870 s.g.	$0.70	$0.70	$0.70
WAXES (In cents per pound, f.a.s. carload lots)			
WHITE CRUDE SCALE (In barrels)			
122-124 A.m.p.	5.125– 5.375	5.375– 5.50	5.375– 5.50
124-126 A.m.p.	5.125– 5.375	5.375– 5.50	5.375– 5.50
FULLY REFINED (In burlap bags)			
123-125 A.m.p. Phila.	5.75	5.75 – 5.875	5.875
125-127 A.m.p.	5.875– 6.00	6.00	5.875– 6.00
128-130 A.m.p.	6.25	6.25	6.25
130-132 A.m.p.	6.50 – 6.75	6.50 – 6.75	6.50 – 6.75
133-135 A.m.p.	7.25 – 7.50	7.25 – 7.50	7.25 – 7.50
135-137 A.m.p.	7.75	7.75	7.75
YELLOW CRUDE SCALE			
124-126 A.m.p.	5.00	5.25	5.25

Gulf Export Market

(Prices are f. o. b. Gulf oil terminals in Texas and Louisiana, shipments of 20,000 bbls. and over unless otherwise noted, representing sellers' opinions, except those prices specified to the contrary)

GASOLINE	Oct. 1	Sept. 24	Sept. 17
U. S. Motor	9.375– 9.875	9.875–10.00	10.00
60-62 400 e.p.	10.25	10.50 –10.75	10.75
61-63, 390 e.p.	10.875–11.00	11.125–11.25	11.25
64-66, 375 e.p.	11.125–11.25	11.50 –11.75	11.75 –12.00
U. S. Motor, cases (cargoes)	$1.85 –$1.90	$1.90	$1.90
64-66, cases (cargoes)	$2.00 –$2.05	$2.05 –$2.10	$2.10
KEROSENE			
44 water white	7.75	7.75	7.75
41-43 prime white	6.75	6.75	6.75
Water white, cases (cargoes)	$1.65	$1.65	$1.65
Prime white, cases (cargoes)	$1.55	$1.55	$1.55
DOMESTIC GAS & BUNKER OILS			
*26-30 translucent gas oil	3.875– 4.00	3.875– 4.00	3.875– 4.00
*30-32 translucent gas oil	4.00	4.00	4.00
Grade C bunker oil	$0.85 –$0.95	$0.85 –$0.95	$0.875–$0.95
Grade C bunker oil, cargoes	$0.65 –$0.70	$0.65 –$0.70	$0.65 –$0.70

***Less than ½ of 1% sulfur.**

ME&ICAN CRUDE AND BUNKER OILS (F. O. B. Steamer, Tampico)			
Heavy Panuco crude taxes to be paid	$0.95	$0.95	$0.95
Grade C bunker oil, for bunkering purposes, taxes paid	$1.05	$1.05	$1.05

SOUTH TEXAS LUBRICATING OILS (Viscosity at 100°F.: cold test 0) (Tanker, f.o.b. Houston)			
100 vis. No. 2 unfiltered pale	5.75	5.75	5.75
200 vis. No. 3 unfiltered pale	8.50 – 9.00	8.50 – 9.00	8.50 – 9.00
300 vis. No. 3 unfiltered pale	9.50 – 9.875	9.50 – 9.875	9.50 – 9.875
500 vis. No. 3½ unfiltered pale	10.75 –11.50	10.75 –11.50	10.75 –11.50
750 vis. No. 4 unfiltered pale	12.50 –13.00	12.50 –13.00	12.50 –13.00
1200 vis. No. 5 unfiltered pale	15.50 –16.00	15.50 –16.00	15.50 –16.00
200 vis. No. 5-6 red oil	7.00 – 8.00	7.00 – 8.00	7.00 – 8.00
300 vis. No. 5-6 red oil	8.00 – 9.00	8.00 – 9.00	8.00 – 9.00
500 vis. No. 5-6 red oil	9.75 –10.50	9.75 –10.50	9.75 –10.50
750 vis. No. 5-6 red oil	11.25 –11.50	11.25 –11.50	11.25 –11.50
1200 vis. No. 5-6 red oil	14.50 –16.50	14.50 –16.50	14.50 –16.50

Pacific Export Market

(Quotations are at seaboard, Los Angeles, in cargo lots, cents per gallon, except where otherwise noted.)

	Oct. 1	Sept. 24	Sept. 17
Gasoline, U. S. Motor, 53-55 Gravity	8.50 – 9.00	8.75 – 9.25	8.75 – 9.25
Gasoline, U. S. Motor, blends and special cuts	9.00 –11.50	9.25 –10.50	9.25 –10.50
Gas Oil, 30-34, per barrel	$1.10 –$1.20	$1.10 –$1.20	$1.10 –$1.20
Diesel Oil, 27 plus, per barrel	$0.95 –$1.10	$0.95 –$1.10	$0.95 –$1.10
Bunker oil, 14-18, per barrel	$0.80 –$1.00	$0.80 –$1.00	$0.80 –$1.00
Fuel oil, 14-18 per barrel	$0.70 –$1.00	$0.70 –$1.00	$0.70 –$1.00
Kerosene, 38-40 w.w., 125-150 flash, per gal.	5.50 – 6.00	5.50 – 6.00	5.50 – 6.00
Cased Goods			
Gasoline, U. S. Motor	$1.75 –$1.85	$1.75 –$1.85	$1.75 –$1.85
Kerosene, 38-40 w.w., 125-150 flash	$1.50 - $1.60	$1.50 –$1.60	$1.50 –$1.60

Tanker Rates

(Approximate tanker freight rates to Continental ports, in shillings per ton of 2240 pounds, British sterling) to American ports, cents per barrels)

	Crude &/or Fuel	Refined Oil
Calif. to U. K. or Continental ports*	25/6	25/6
Gulf to U. K. or Continental ports*	14	14/3
North Atlantic to U. K. or Continental ports*	12/3	12/6
Calif. to North Atlantic ports (not E. of N. Y.)	50-55c	65-70c
Gulf and North Atlantic ports (not E. of N. Y.)**	16-17c	25-27c

*Continental ports in the range between Bordeaux and Hamburg, both inclusive.

**For Venezuela loading 1c per bbl. additional. For Tampico loading 4c per bbl. additional.

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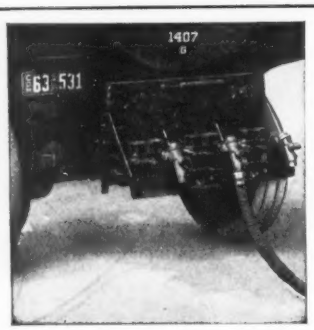

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Tank Wagon Price Changes

Gasoline Changes

Standard of Louisiana—T.w. and s.s. prices gasoline advanced 1 cent, Memphis, to 19 cents and 21 cents respectively, including 3 cent state tax, **Sept. 21.**

Canada—T.w. price gasoline advanced 1 cent, British Columbia, **Sept. 15.**

Kerosene Changes

Canada—Kerosene price advanced 1 cent, British Columbia, **Sept. 15.**

Foreign Buying Slows Up In Export Market

(*Continued from Page* 120)

modity the price is 0.875-cent lower than the last paid, and for 64-66, 1.125-cent lower.

The trade was far from being in agreement on prices as the week ended. Their ideas of the 64-66 market were more nearly in line at 11.25 cents; several suppliers doubted, however, if 9.375 cents could be duplicated for U. S. Motor in the near future. Most of them continued to give 9.75 to 10 cents as their ideas of prices for this commodity.

The intermediate grades of gasoline were quoted lower, but here likewise suppliers were somewhat at variance in their views. The 60-62, 400 end point gasoline was quoted largely at 10.25 cents, but 61-63, 390 end point goods were held at 0.5 to 0.75-cent higher. The differential between the two grades usually is 0.25-cent.

Two or three other French inquiries which have been in the market tentatively for nearly three weeks were still hanging fire on Saturday of this week. Which seems to bear out a saying, old among the export trade, that the Frenchman never buys on a softening market.

There were no developments of importance in the kerosene market. One inquiry for a mixed cargo specified a small quantity of prime white but the business had not been closed up to the end of the week. Suppliers generally agreed on 6.75 cents and 7.75 cents as prices for prime white and water white, respectively, although it was indicated in one or two quarters that the prime white price might be shaded 0.125-cent.

The market for heavy oils was relatively quiet.

Bunker markets were steady at $0.85 to $0.95 a barrel.

Tank Wagon, Service Station Markets for Gasoline and Kerosene

(OIL PRICE HANDBOOK has t.w. and s.s. markets for the whole year, arranged for quick reference)

These Prices in Effect Oct. 1, 1928, as Posted by Principal Marketing Companies

S.O. NEW JERSEY TERRITORY

	Gasoline				Oil
			Total		
	T.W.	Tax	T.W.	S.S.	T.W.
Atlantic City, N. J.	17	2	19	20	14
Newark, N. J.	17	2	19	20	14
Annapolis, Md.	17	4	21	23	14
Baltimore, Md.	17	4	21	23	11
Cumberland, Md.	17	4	21	23	14
Washington, D. C.	17	2	19	21	14
Danville, Va.	17	5	22	*	14
Norfolk, Va.	14	5	19	20	14
Richmond, Va.	17	5	22	24	14
Roanoke, Va.	17	5	22	24	14
Petersburg, Va.	17	5	22	24	14
Charleston, W. Va.	17	4	21	23	14
Keyser, W. Va.	17	4	21	23	14
Parkersburg, W. Va.	17	4	21	23	14
Wheeling, W. Va.	17	4	21	23	14
Charlotte, N. C.	17	4	21	23	14
Hickory, N. C.	17	4	21	23	14
Mt. Airy, N. C.	17	4	21	23	14
Salisbury, N. C.	17	4	21	23	14
Charleston, S. C.	17	5	22	24	14
Columbia S. C.	17	5	22	24	14

*Dealers set own prices. S. O. New Jersey does not operate station.

S. O. NEW YORK

Due to local price conditions at many points in S. O. New York territory, actual prices on both gasoline and kerosene are being made at under the posted tank wagon prices published below.

New York, City	18	0	18	*20	15
Albany, N. Y.	18	0	18	21	15
Buffalo, N. Y.	18	0	18	20	15
Rochester, N. Y.	18	0	18	20	13
Syracuse, N. Y.	18	0	18	20	15
Boston, Mass.	18	0	18	20	15
Augusta, Me.	18	4	22	24	15
Manchester, N. H.	18	4	22	24	15
Burlington, Vt.	18	3	21	23	15

*The Standard of New York does not operate stations in New York City. This figure is the retail price of a principal station operator in New York, selling Socony gasoline.

ATLANTIC REFINING

Pittsburgh, Pa.	17	*	17	*22	15
Philadelphia, Pa.	17	*	17	*22	15
Allentown, Pa.	17	*	17	*22	15
Erie, Pa.	17	*	17	*22	15
Scranton, Pa.	17	*	17	*22	15
Altoona, Pa.	17	*	17	*22	15
Dover, Del.	17	3	20	22	15
Wilmington, Del.	17	3	20	22	15
Providence, R. I.	18	2	20	22	15
Boston, Mass.	18	0	18	20	15
Springfield, Mass.	18	0	18	20	15
Worcester, Mass.	18	0	18	20	15
Hartford, Conn.	18	2	20	22	14
New Haven, Conn.	18	2	20	22	15

*3-cent state tax is collected by retail dealer and paid by him directly to state.

S. O. KENTUCKY

Ashland, Ky.	17	5	22	24	15.5
Catlettsburg, Ky.	17	5	22	24	15.5
Lexington, Ky.	16	5	21	23	15.5
Louisville, Ky.	16	5	21	23	15
Covington, Ky.	17	5	22	22	15.5
Clarksdale, Miss.	17	4	21	23	13
Gulfport, Miss.††	18.5	4	22.5	24.5	14
Jackson, Miss.	17	4	21	23	14.5
Natchez, Miss.	16.5	4	20.5	22.5	14
Vicksburg, Miss.	16.5	4	20.5	22.5	14
Birmingham, Ala.	14	4	18	20	14
Mobile, Ala‡	18	4	22	24	15
Montgomery, Ala.*	19	4	23	25	16.5
Atlanta, Ga.	18	4	22	24	†16.5
Augusta, Ga.	18	4	22	24	†15.5
Macon, Ga.	18	4	22	24	†16.5
Savannah, Ga.	17	4	21	21	†15.5
Jacksonville, Fla.	18	5	23	25	14.5
Miami, Fla.	19	5	24	26	15.5
Tampa, Fla.	18	5	23	25	14.5
Pensacola, Fla.**	19	5	24	26	14.5

*Local privilege tax of 1 cent on gasoline and ½ cent on kerosene at Montgomery included. ‡Mobile gasoline prices include 1c city tax.

†Georgia kerosene prices include 1c state tax.

**Both tank wagon prices include 1c city tax at Pensacola, which went into effect Oct. 15, 1926.

††Both tank wagon prices at Gulfport include Harrison county privilege tax of 2c.

S. O. INDIANA

	Gasoline				Oil
			Total		
	T.W.	Tax	T.W.	S.S.	T.W.
Chicago, Ill.	15	0	15	17	12
Decatur, Ill.	15.2	0	15.2	17.2	12.1
E. St. Louis, Ill.	14.4	0	14.4	16.4	11.2
Joliet, Ill.	15.4	0	15.4	17.4	12.3
Peoria, Ill.	15.2	0	15.2	17.2	12.1
Quincy, Ill.	15.2	0	15.2	17.2	11.9
Indianapolis, Ind.	15.2	3	18.2	20.2	13.2
Evansville, Ind.	15	3	18	20	13
South Bend, Ind.	15.4	3	18.4	20.4	13.4
Detroit, Mich.	15.8	3	18.8	20.8	13.7
Grand Rapids, Mich.	15.7	3	18.7	20.7	13.6
Saginaw, Mich.	15.9	3	18.9	20.9	13.8
Green Bay, Wis.	15.6	2	17.6	19.6	12.4
Madison, Wis.	15.3	2	17.3	19.3	12.1
Milwaukee, Wis.	15.1	2	17.1	19.1	11.9
La Cross, Wis.	16.2	2	18.2	20.2	13
Minneapolis, Minn.	16.2	2	18.2	20.2	12.9
Duluth, Minn.	16.5	2	18.5	20.5	12.9
Mankato, Minn.	16.1	2	18.1	20.1	12.7
Des Moines, Ia.	15.5	3	18.5	20.5	12.3
Davenport, Ia.	15.5	3	18.5	20.5	12.3
Sioux City, Ia.	15.1	3	18.1	20.1	11.9
Mason City, Ia.	15.5	3	18.5	20.5	12.3
St. Louis, Mo.	*14.9	2	16.9	18.9	11.3
Kansas City, Mo.	†15.9	2	17.9	19.9	10.6
St. Joseph, Mo.	†15.5	2	17.5	19.5	11.2
Fargo, N. D.	17.9	2	19.9	21.9	14.9
Grand Forks, N. D.	18.2	2	20.2	22.2	15.2
Minot, N. D.	17.9	2	19.9	21.9	14.9
Pierre, S. D.	16	4	20	22	13.4
Huron, S. D.	16.3	4	20.3	22.3	13.7
Wichita, Kans.	13.8	2	15.8	17.8	10.8
Bartlesville, Okla.	13.5	3	16.5	18.5	10.5

S. O. Indiana's quantity contract price schedule on tank truck deliveries of gasoline, figured from the service station price, is 2c for 500 gals. or more a month; 2½c for 2000 gals. or more a month; and 3c for 6000 gals. or more a month.

*Includes city tax of ½c.

†Includes city tax of 1c.

CONTINENTAL OIL

Denver, Colo.	16	3	19	22	14.5
Pueblo, Colo.	16	3	19	22	14.5
Grand Junc., Colo.	19.5	3	22.5	25.5	18
Casper, Wyo.	16	3	19	22	13
Cheyenne, Wyo.	17	3	20	23	14.5
Butte, Mont.	20.5	3	23.5	26.5	19
Helena, Mont.	20.5	3	23.5	26.5	19
Salt Lake City, Utah	18.5	3½	22	25	17
Boise, Ida.	20.5	4	24.5	27.5	19
Twin Falls, Ida.	20.5	4	24.5	27.5	19
Albuquerque, N. M.	17	5	22	25	17

S. O. CALIFORNIA

Phoenix, Ariz.	12	4	16	20	21.5
Los Angeles, Cal.	13.5	3	16.5	20.5	15.5
Fresno, Cal.	14	3	17	21	16.5
San Francisco, Cal.	14	3	17	21	15.5
Reno, Nev.	18	4	22	26	19
Portland, Ore.	14.5	3	17.5	21.5	16.5
Seattle, Wash.	14.5	2	16.5	20.5	16.5
Spokane, Wash.	18.5	2	20.5	24.5	20.5
Tacoma, Wash.	14.5	2	16.5	20.5	16.5

S. O. LOUISIANA

Little Rock, Ark.	16	5	21	23	14
Alexandria, La.	15	2	17	19	†16
Baton Rouge, La.	14	2	16	18	†14.5
Lake Charles, La.	15.5	2	17.5	19.5	†16
New Orleans, La.	*15.5	2	*17.5	*19.5	†16
Shreveport, La.	15.5	2	17.5	19.5	†15
Lafayette, La.	15	2	17	19	†15.5
Bristol, Tenn.	18	3	21	23	15
Chattanooga, Tenn.	17.5	3	20.5	22.5	16
Knoxville, Tenn.	18	3	21	21	16
Nashville, Tenn.	17	3	20	22	16
Memphis, Tenn.	16	3	19	21	15

*New Orleans gasoline prices include 1c parish tax in addition to 2c state tax, and kerosene prices include 1c state tax and 1c parish tax.

†Kerosene price in Louisiana includes 1c state tax.

S. O. OHIO

	Gasoline				Oil
			Total		
	T.W.	Tax	T.W.	S.S.	T.W.
All Ohio points	16	3	19	20	14

S. O. NEBRASKA

Omaha, Neb.	15.25	2	17.25	19.25	12.25
McCook	16.75	2	18.75	20.75	13.75
Norfolk	15.75	2	17.75	19.75	12.75
North Platte	16.75	2	18.75	20.50	13.50
Scottsbluff	16.75	2	18.75	20.75	13.25

MAGNOLIA PETROLEUM

Muskogee, Okla.	15	3	18	20	11
Oklahoma City	15	3	18	20	11
Tulsa, Okla.	14	3	17	19	9
Fort Smith, Ark*	16	*2	18	20	13
Little Rock, Ark.	16	5	21	23	13
Texarkana, Ark.*	14.5	*2	16.5	20.5	13
Dallas, Tex.	14	2	16	20	12
Fort Worth, Tex.	14	2	16	19	12
Houston, Tex.	14	2	16	20	15
San Antonio, Tex.	12	2	14	17	11
El Paso, Tex.	15	2	17	20	16

*Within City of Texarkana and Fort Smith, the state tax on gasoline is 2c per gal. conforming with the Texas state tax. In these two districts outside of the city the 5c Arkansas tax applies.

V. M. & P. NAPHTHA

(Changes ordinarily occur coincident with gasoline price changes)

	Oleum Spirits	V.M.&P. Naphtha	Cleaner Naphtha
Chicago	14.7	16.2	18
Detroit	16.4	17.9	19.7
Kansas City	†14.9	†16.4	†18.2
Milwaukee	15.4	*18.9	*20.7
Minneapolis	*18.7	*20.2	*22
St. Louis	14.6	16.1	17.9
New York		20	....

*Includes 2c state tax. †Includes 1c city tax.

CANADA

(Per Imperial Gallon, which is 1.2 American Gallons)

	Gasoline				Oil
			Total		
	T.W.	Tax	T.W.	S.S.	T.W.
ONTARIO					
Toronto	20.5	3	23.5	27	22
Ottawa	20.5	3	23.5	27	22
Cochrane	25.5	3	28.5	..	27
Ft. William	23.5	3	26.5	30	23.5
MANITOBA					
Winnipeg	22.5	3	25.5	29	22.5
SASKATCHEWAN					
Regina	27	3	30	34	27
ALBERTA					
Edmonton	27.5	3	30.5	34	27.5
Calgary	22.5	3	25.5	29	22.5
BRITISH COLUMBIA					
Vancouver	22	3	25	28	23
QUEBEC					
Montreal	21.5	5	26.5	30	22
Quebec City	22.5	5	27.5	31	23
Three Rivers	22.5	5	27.5	31	23
NEW BRUNSWICK					
St. John	23.5	3	26.5	30	25
Moncton	23.5	3	26.5	30	25
NOVA SCOTIA					
Halifax	23.5	5	28.5	32	25
Sydney	23.5	5	28.5	32	25
PRINCE EDWARD ISLAND					
Charlottetown	23.5	5	28.5	32	25

Note: In districts surrounding these points 1c additional is added to city price.

Above prices include these inspection fees on both gasoline and kerosene, per gallon: Alabama, 1/40c on gasoline, 1/2c kerosene; Arkansas, 1/20c on both; Colorado, 1/10c on both; Florida, 1/8c on both; Indiana, 2/25c on both; Kansas, 1/50c on both; Louisiana, 1/32c on gasoline, 1c on kerosene; Minnesota, 3/50c on both; Missouri, 1/50c on both; Nebraska, 3/50 to 1/2c on both; North Carolina, 1/4c on both; North Dakota, 1/20c on both; Oklahoma, 4/25c on both; South Carolina, 1/8c on both; South Dakota, 1/10c on both; Tennessee, 2/5c on gasoline and 1/2c on kerosene; Wisconsin, 3/50c on both.

Kerosene inspection fees only: Iowa, 13/100c; Michigan, 1/5 to 4/5c per gal.

In Illinois, cities and villages have the power to appoint oil inspectors and fix inspection fees which is done in some instances. In some cases in the above states or other states there are local inspection fees.

Crude Oil Prices (in Effect Oct. 1)

(Crude prices for the whole year in OIL PRICE HANDBOOK published annually)

EASTERN FIELDS

(Posted by Joseph Seep Purchasing Agency)

Penna. Grade Oil in New York Transit Lines (Alleghany, N. Y. District)	$3.35
Bradford District Oil in National Transit Lines (Bradford District)	3.35
Penna. Grade Oil in National Transit Lines (Other Pennsylvania)	3.25
Penna. Grade Oil in Southwest Penna. Pipe Lines (Other Pennsylvania)	3.25
Penna. Grade Oil in Eureka Pipe Lines (West Virginia)	3.15
Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O. district)	3.00
Cabell Grade in Eureka Pipe Lines (West Virginia)	1.45
Corning Grade in Buckeye Pipe Lines (Ohio)	1.80
Corning, O., heavy grade	1.70
Somerset Oil in Cumberland Pipe Lines (Kentucky)	1.75
Ragland Grade in Cumberland Pipe Lines (Kentucky)	.95

(Posted by Stoll Oil Refining Co.)

Oil City, Ky., oil in Stoll lines	$1.75

CENTRAL STATES FIELDS

Posted by Ohio Oil Co.

Effective July 27, 1928

Wooster	$1.67	Princeton	$1.55
Lima	1.60	Illinois	1.55
Waterloo	1.20	Plymouth	1.28
Indiana	1.37	West Kentucky	1.63

CANADIAN CRUDE

Posted by Imperial Oil Refineries, Ltd.

Petrolia	$2.00
Oil Springs	2.07

OKLAHOMA, KANSAS and NORTH TEXAS

Prices of Prairie Oil & Gas Co.
(In Oklahoma, Kansas, North and East Central Texas)

Effective July 26, 1928

Below 25	$0 60	35-35.9	$1.31
25-25.9	0 67	36-36.9	1.36
26-26.9	0 74	37-37.9	1.41
27-27.9	0.81	38-38.9	1.46
28-28.9	0.88	39-39.9	1.51
29-29.9	0.95	40-40.9	1.56
30-30.9	1.02	41-41.9	1.61
31-31.9	1.09	42-42.9	1.66
32-32.9	1.16	43-43.9	1.71
33-33.9	1.21	44 and above	1.76
34-34.9	1.26		

Humble Oil & Refining Co. Prices

(Ranger, North Texas, Mexia, Powell, Richland, Wortham, Lytton Springs, Currie, Moran and Nocona crudes all in Texas.)

July 26, same schedule as Prairie.

Mirando, Tex.	$1.00

Magnolia Petroleum Co.

(In Oklahoma, Kansas and North and East Central Texas)

July 26, Magnolia posted in above fields and in Panola Co., same schedule as Prairie, except these grades:

Below 25	$0 60	27-29 9	$0 75
25-25.9	0 67	30-30.9	0 90
26-26 9	0 74	31-31.9	1 05

Glasscock, Crane, Upton, Winkler Counties	0 65
Chalkfield (Howard Co.)	0.80
Iatan district	0.93
Corsicana heavy	1.00

Carter Oil Co.

(Oklahoma and Kansas)

July 26, same schedule as Prairie except Carter does not post oil below 25.

PANHANDLE, TEXAS

Humble Oil & Refining Co.

Effective July 26, 1928

Hutchinson and Carson Counties:

Below 32	$0.69	38-38.9	$1.06
32-32.9	0 76	39-39.9	1.11
33-33.9	0.81	40-40.9	1.16
34-34.9	0 86	41-41.9	1.21
35-35.9	0.91	42-42.9	1.26
36-36.9	0.96	43-43.9	1.31
37-37.9	1.01	44 and above	1.36

Wheeler County:

Below 30	$0.65	37-37.9	$1.11
30-30.9	0.72	38-38.9	1.16
31-31.9	0.79	39-39.9	1.21
32-32.9	0.86	40-40.9	1.26
33-33.9	0.91	41-41.9	1.31
34-34.9	0.96	42-42.9	1.36
35-35.9	1.01	43-43.9	1.41
36-36.9	1.06	44 and above	1.46

Gray County:

Below 29	$0.68	37-37.9	1.21
29-29.9	0.75	38-38.9	1.26
30-30.9	0.82	39-39.9	1.31
31-31.9	0.89	40-40.9	1.36
32-32.9	0.96	41-41.9	1.41
33-33.9	1.01	42-42.9	1.46
34-34.9	1.06	43-43.9	1.51
35-35.9	1.11	44 and above	1.56
36-36.9	$1.16		

WEST TEXAS

Humble Oil & Refining Co.

Effective July 26, 1928

Winkler, Crane, Upton, Crockett, and Pecos Counties	$0.65

NORTH LOUISIANA—ARKANSAS FIELDS

Prices of Standard Oil Co. of Louisiana

Caddo, Homer, Haynesville, Bull Bayou, El Dorado, Crichton, De Soto and **Cotton Valley.

Effective July 26, 1928

Below 28	$0.81	36-36.9	$1.36
28-28.9	0 88	37-37.9	1.41
29-29.9	0.95	38-38.9	1.46
30-30.9	1 02	39-39.9	1.51
31-31.9	1 09	40-40.9	1.56
32-32.9	1.16	41-41.9	1.61
33-33.9	1.21	42-42.9	1.66
34-34.9	1.26	43-43.9	1.71
35-35.9	1.31	44 and above	1.76

**Cotton Valley, below 36, $0.75. Beginning with 36-36.9, same schedule as above.

Smackover, below 24	$0.75
do 24 and above	.90
Bellevue	1.25
*Urania, La.	.85
†East El Dorado	0.75

*Posted by Louisiana Oil Refining Corp.

†Posted by Magnolia Petroleum Co.

Smackover prices posted on Feb. 7 by S. O. La. Gulf, Shreveport-El Dorado Pipe Line, Atlantic Oil Producing Co. and The Texas Co.; on Feb. 8 by Magnolia: on Feb. 6 by La. Oil Refg. Corp.

Aug. 8 The Texas Co., same schedule in Louisiana as Standard, plus these grades: 24-24.9, $0.60; 25-25.9, $0.67; 26-26.9, $0.74; 27-27.9, $0.81.

Aug. 7 Magnolia Petroleum met Standard schedule in Louisiana-Arkansas fields.

STEPHENS, ARKANSAS

Louisiana Oil Refining Corp., and Atlantic Oil Producing Co.

Effective Aug. 2, 1928

Below 28	$0 75	30-30.9	$0.87
28-28.9	0.79	31-31.9	0.91
29-29.9	0.84	32 and above	0.95

GULF COASTAL

Posted by Humble Oil & Refining Co.

Effective March 14, 1927

Grades A	$1.20	29-29.9	$1.25
Grades B:		30-30.9	1.27
Below 25	1.15	31-31.9	1.29
25-25.9	1.17	32-32.9	1.31
26-26.9	1.19	33-33.9	1.33
27-27.9	1.21	34-34.9	1.35
28-28.9	1.23	35 and above	1.37

Fields classified as A and B are Spindletop, Goose Creek, Hull, Liberty, Sour Lake, West Columbia, Orange, Boling and Pierce Junction. All other fields are Grades A only.

Crude Price Changes

LOUISVILLE—On Oct. 1 Stoll Oil Refining Co. advanced price of Oil City, Ky. crude 10 cents, making new price $1.75 per barrel.

TOLEDO—On Oct. 1 Paragon Development Co. advanced crude in Barren, Cumberland, Monroe, and Clinton counties, Ky., and in Clay and Pickett counties, Tenn., 10 cents, making new price in all fields $1.75 per barrel.

OIL CITY—On Sept. 25 Joseph Seep Purchasing Agency discontinued postings of Keister, Butler county, Pa., crude.

Along the Air Lanes

Capt. E. E. Aldrin, manager of the Aviation Division of the Standard Oil Development Co. has been appointed to the aeronautical advisory board of the Society of Automotive Engineers. Eighteen other leaders in the aeronautic field including F. Trubee Davidson, Assistant Secretary of War in charge of aviation, and General W. E. Gillmore, head of the Material Division, U. S. Air Corps also are members of the board.

The board was organized recently to collect and disseminate aeronautic technical information and the establishing of engineering standards that are essential for constructing aircraft on a quality and economical basis.

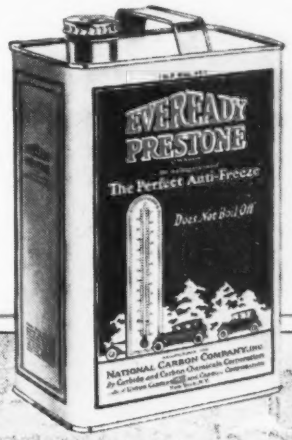
When the C. F. Lytle oil interests needed a 9⅞-inch core bit for use on a deep test at Mexia, Limestone county, Texas, Sept. 19, they took the quickest way of getting it. An order was telephoned to the Reed Roller Bit Co., Houston, and Mr. Lytle's Ryan monoplane was started from Mexia at 5:45 a.m. Arriving in Houston at 7:10 a.m., piloted by L. G. Larson, the airplane took the core bit aboard and the return trip was begun 10 minutes later.

Delivery of a Lockwood-Vega cabin monoplane to The Texas Corp. has been made at Houston for use of President B. E. Hull of The Texas Pipeline Co., and other executives. It has accommodations for four passengers and a pilot. The new plane will be known as "Texaco No. 2." The Ford-Stout monoplane operated in sales service of The Texas Corp., and known as No. 1, is now in New England territory.

Prizes of free airplane rides were offered city officials of Kansas municipalities attending their annual convention in Kansas City recently, by the Butler Manufacturing Co., of Kansas City. The Butler plane is used by the company in consulting with city officials on arrangements of airports and steel hangars and buildings.

Nineteen members attending the convention won free rides. The Butler plane was piloted by Lt. Elmer C. Rodenbaugh.

"We have decided to handle only Eveready Prestone"



SUCH is the endorsement of Tehan and Head, dealers, of Louisville, Ky., who also add, *"There are two things in favor of Eveready Prestone: First, the certainty the customer has as to the condition at all times of his radiator; second, the dealer can realize a legitimate profit on Eveready Prestone."*

This month a big advertising campaign on Eveready Prestone opens with color pages in leading national magazines. Furthermore, at the first forecast of freezing weather full-page advertisements will appear in over 250 newspapers. Be sure you are ready with an ample stock of "the perfect anti-freeze" when this advertising starts consumer demand. Don't pass up the quick profits you can realize from this fast-selling winter item.

Get your order in before cold weather begins, and this year make every customer you serve a repeat customer for next year. That is easy to do by making a point of the following service on every car: Remove accumulated rust and scale. Tighten all parts of the circulating system, including hose and pump connections, gaskets, expansion plates, drain-cocks, pump glands and grease-cups on water-pump. Add water first, then Eveready Prestone, and fill the radiator only to within four inches of the top of the overflow pipe, to prevent loss by expansion. Complete directions are on the Eveready Prestone can.

Any day now winter will begin. Be prepared for the many sales opportunities that Eveready Prestone advertising will create. Order from your jobber without delay.

Manufactured for

NATIONAL CARBON CO., INC., New York, N. Y.

Branches:

ATLANTA CHICAGO KANSAS CITY LONG ISLAND CITY
SAN FRANCISCO

By CARBIDE AND CARBON CHEMICALS CORPORATION

Units of Union Carbide UCC *and Carbon Corporation*

EVEREADY PRESTONE

(TRADEMARK)

For the Preparation of

The Perfect Anti-Freeze

Crude Oil Prices (in Effect Oct. 1)

(Crude prices for the whole year in OIL PRICE HANDBOOK published annually)

GULF COASTAL

Prices of The Texas Co.

Effective March 14, 1927

Grades A	$1.20	*Grades B	$1.15
‡Grades B (light crude):			
35-35.9	$1.37	38-38.9	$1.43
36-36.9	1.39	39-39.9	1.45
37-37.9	1.41	40 and above	1.47

*Grades B include all heavy crudes which do not meet tests for Grades A or for Gulf Coast light crude.

‡The Texas Co.'s gravity and price schedule on oil below 35° is same as Humble's postings on Grades B.

ROCKY MOUNTAIN FIELDS

Prices of Ohio Oil Co., and Midwest Refining Co.

(Salt Creek prices effective July 26, 1928)

‡Salt Creek	29-29.9	$0.95
" "	30-30.9	1.02
" "	31-31.9	1.09
" "	32-32.9	1.16
" "	33-33.9	1.21
" "	34-34.9	1.26
" "	35-35.9	1.31
" "	36-36.9	1.36
" "	37 and above	1.41
Elk Basin		1.48
Grass Creek light		1.48
Big Muddy		1.33
Lance Creek		1.48
Rock Creek		1.33
Mule Creek		1.10
Rex Lake		1.10
‡Osage		1.48
‡Cat Creek, Mont.		1.48
Sunburst, Mont.		1.65
‡Hogback, N. Mex.		1.48
Artesia, N. Mex.		1.08

‡Posted by Midwest Refining Co. Midwest also buys Grass Creek light and Elk Basin.

CALIFORNIA

Standard Oil Co. of California

Santa Maria and Ventura Posted by Union Oil Co.

Gravity	Signal Hill Seal Beach Alamitos Heights Huntington Beach	Inglewood Torrance	Olinda-Brea Canon Richfield	Athens-Rosecrans Dominguez	Whittier La Habra	Coyote Hills	Santa Fe Springs	Newhall McKittrick Kern River	Midway, Sunset Buena Vista & Elk Hills	Lost Hills	Coalinga	Wheeler Ridge	Montebello	Santa Maria	Ventura
14-14.9	$ .85	$ .85	$ .85	....	$ .85	$ .85	....	$ .75	$ .75	$ .75	$ .75	$ .75	$ .85	$ .85	$ .85
15-15.9	.85	.85	.85	....	.85	.85	....	.75	.75	.75	.75	.75	.85	.85	.85
16-16.9	.85	.85	.85	....	.85	.85	....	.75	.75	.75	.75	.75	.85	.85	.85
17-17.9	.85	.85	.85	....	.85	.85	....	.75	.75	.75	.75	.75	.85	.85	.85
18-18.9	.85	.85	.85	....	.85	.85	....	.75	.75	.75	.75	.75	.85	.85	.85
19-19.9	.85	.85	.85	....	.85	.85	....	.75	.75	.75	.75	.75	.85	.85	.85
20-20.9	.85	.85	.85	....	.85	.85	....	....	.77	.77	.77	.77	.86	.85	.85
21-21.9	.89	.89	.89	....	.88	.88	.89	....	.79	.79	.79	.79	.89	.86	.86
22-22.9	.93	.93	.93	....	.91	.91	.92	....	.82	.82	.82	.82	.92	.87	.87
23-23.9	.97	.97	.97	....	....	.94	.95	....	.86	.86	.85	.85	.95	.90	.90
24-24.9	1.01	1.01	1.01	1.01	....	.97	.98	....	.90	.90	.88	.88	.98	.93	.94
25-25.9	1.05	1.05	1.05	1.05	....	1.00	1.01	....	.95	.95	.91	.91	1.01	.95	.98
26-26.9	1.09	1.09	1.09	1.09	....	1.04	1.04	....	1.00	1.00	.94	.94	1.04	.97	1.02
27-27.9	1.13	1.13	1.13	1.13	....	1.08	1.07	....	1.05	1.05	.98	.97	1.07	....	1.06
28-28.9	1.17	1.17	1.17	1.17	....	1.12	1.10	....	1.10	1.10	1.02	....	1.10	....	1.10
29-29.9	1.21	....	1.21	1.21	....	1.16	1.15	....	1.16	1.16	1.06	....	1.13	.....	1.14
30-30.9	1.25	....	1.25	1.25	....	1.20	1.20	....	1.22	1.22	1.10	....	1.16	....	1.18
31-31.9	1.30	....	....	1.30	....	....	1.25	....	1.28	1.28	1.14	....	....	....	1.23
32-32.9	1.35	....	....	1.35	....	.....	1.30	....	1.34	1.34	1.18	....	....	....	1.28
33-33.9	....	....	....	1.41	....	.....	1.35	....	1.40	1.40	1.22	....	....	....	....
34-34.9	....	....	.....	1.47	....	.....	1.40	....	....	1.46	1.26	....	....	....	....
35-35.9	....	....	....	1.53	....	....	1.45	....	....	....	1.30	....	....	....	....
36-36.9	....	....	....	1.59	....	....	1.50	....	....	....	....	....	....	....	....
37-37.9	....	....	....	1.65	....	....	1.55	....	....	....	....	....	....	....	....
38-38.9	....	....	....	1.71	....	....	1.60	....	....	....	....	....	....	....	....
39-39.9	....	....	....	1.77	....	....	1.65	....	....	....	....	....	....	....	....
40-40.9	....	....	....	1.83	....	....	....	....	....	....	....	....	....	....	....
41-41.9	....	....	....	1.89	....	....	....	....	....	....	....	....	....	....	....
42-42.9	....	....	....	1.95	....	....	....	....	....	....	....	....	....	....	....

*Union Oil Co. posts same prices in all above fields as Standard except in Montebello and Wheeler Ridge. It also posts Elwood Terrace at same prices as Rosecrans—Dominguez and also posts Santa Maria (Orcutt) and Ventura.

REFINERS' and COMPOUNDERS' SUPPLIES

Following are average market prices for materials used by refiners and compounders as effective the date shown.

	Oct. 1	Sept. 24
Refiners' Supplies		
Soda Ash light 58% bags, cwt.	$1.32	$1.32
Silicate of Soda 60 deg. drums, cwt.	$1.65	$1.65
Silicate of Soda 40 deg. tank cars, cwt.	$0.60	$0.60
Silicate of Soda 40 deg. drums, cwt.	$0.70-0.75	$0.70-0.75
Sal Soda wks.	$0.90	$0.90
Caustic Soda 76% solid, cwt.	$2.90	$2.90
Sulfuric Acid 60 deg. tank cars, f.o.b. shipping point per ton	$11.00	$11.00
Oleum 20%, fuming sulfuric, tank cars, wks.	$18.50	$18.50
Sulfur, flowers of, cwt.	$3.10-4.00	$3.10-4.00
Liquid Chlorine, tank cars, wks. lb.	3.50-5.00	3.50-5.00
Litharge, powdered, casks, cwt.	9.00	8.75
Compounders' Supplies		
Vegetable Oils		
Linseed carloads, spot, lb.	10.00	9.90
Tanks, spot	9.20	9.10
Soya Bean, Tanks, coast, lb.	9.75	9.75
Oleic Acid		
Distilled, tanks, lb.	8.50	9.00
Distilled, bbls. lb.	9.00	9.75
Saponified, tanks, lb.	9.00	9.25
Saponified, bbls. lb.	9.50	10.00
Lard Oils		
Prime Winter Strained, lb.	16.50	16.50
Extra Winter Strained, lb.	13.75	13.75
Extra, lb.	13.25	13.00
Extra No. 1, lb.	13.00	12.75
No. 1, lb.	12.50	12.25
No. 2, lb.	12.125	11.875
Tallow oil, lb.	12.00	12.00
Neatsfoot Oil		
Pure, bbls. lb.	15.25	15.25
Extra, bbls. lb.	14.00	13.00
No. 1 bbls. lb.	12.75	12.50
Cold Pressed, lb.	19.00	19.00
Fish Oils		
Menhaden Oil		
Light Pressed, gal.	60	60
Light Pressed, tank cars, N. Y. gal.	52-53	52-53
White bleached, gal.	67-68	67-68
Yellow bleached, gal.	64-65	64-65
Whale, extra winter bleached, gal.	82	82
Naval Stores		
Steam distilled turpentine, N. Y., gal.	48	50
Steam distilled turpentine, Savannah, gal.	43	45
Gum turpentine, N. Y., gal.	53	55
Gum turpentine, f.o.b. cars Savannah, gal.	49	51
Wood Rosin F, N. Y., bbl.	$8.55	$8.05
Wood Rosin F, Savn'h, bbl.	$7.80	$7.25
Gum Rosin B, N. Y., bbl.	$8.95	$8.95
Gum Rosin B, f.o.b. cars Savannah, bbl.	$8.20	$8.20
Rosin oil, pure, gal.	58	58
Rosin oil, compounded, gal.	49	49
Pine Tar		
Kiln burnt, bbl.	$12.50-14.00	$12.50-14.00
Retort, bbl.	$13.50-15.50	$13.50-15.50
Alcohol		
Denatured, Formula 5, in bbls., per gal.	54-61	54-61

*Nominal.

Yes . . . the best equipped station does get the business

This fact is being demonstrated daily. And among the many modern devices recently developed to attract and retain business the most effective single merchandising unit is the

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AUTOMATIC AIR STATION

Through rendering an essential service in a new interesting way which pleases motorists and brings them back regularly for service and supplies, the ECO Station invariably turns the red figures of free air service into a sizable profit on the right side of the ledger.

From coast to coast these stately red stations with their distinctive "Bell Signal" are recognized as symbols of service—an invitation to partake of the very best that the market affords.

As worthy companion units to ECO Air Stations there are also available air compressors, car washers and paint spray equipment, each unit of which embodies new ideas and advanced engineering features.

The interesting ECO Catalog tells the story. Return the attached coupon for a copy.

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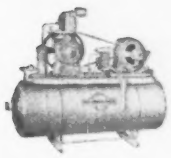

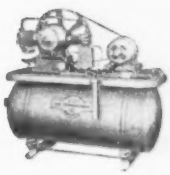

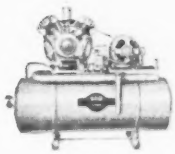

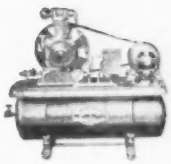

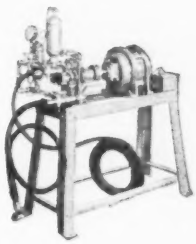

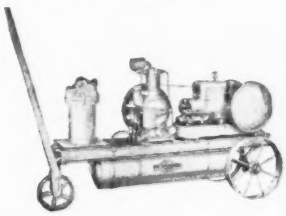

See the entire line at the A. E. A. Show Oct. 22 to 27 Coliseum, Chicago, Booths 221-222-223.

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QUALITY BUILT
LUBRI-KIT
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for Serving Lubricants
Muskegon, Michigan

The Complete Self-contained Dispensing Unit for the

HOME GARAGE

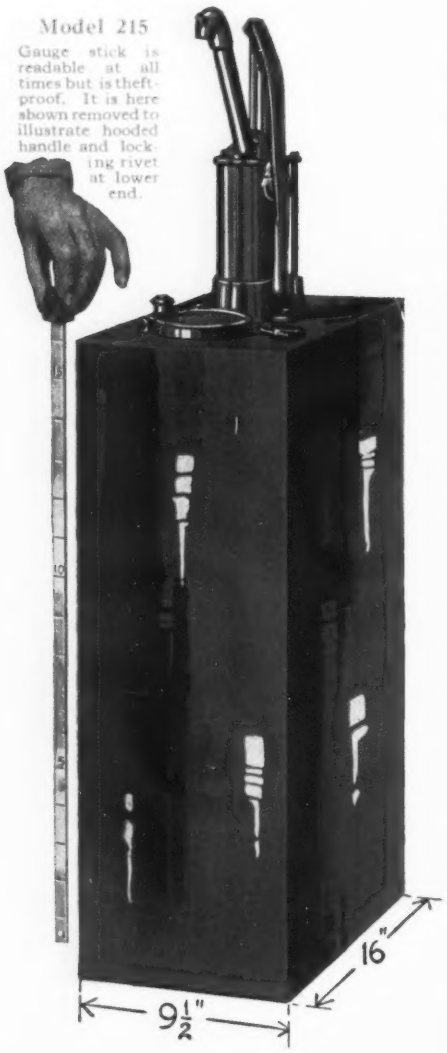
MODEL 215 "Lubri-Kit" made only by Bennett, is a complete, self-contained 16 gallon capacity all-metal lube dispensing unit 9½" wide x 16" deep x 26" high over all, with all metal pump having locking handle; weatherproofed fill opening having heavy cast locking cover; self-draining metal gauge stick, readable at all times and having hooded handle which seals opening against rain and dust. The low price of Lubri-Kit (due to Bennett intensive specialization and large volume production), together with its supreme quality, has caused oil marketers to place Lubri-Kit on duty in public and private garages from coast to coast.

Write for

Lubri-Kit Bulletin to Bennett Pumps Corporation, Muskegon, Michigan. Bennett Export Corporation, 32 Broadway, New York City.

Model 215

Gauge stick is readable at all times but is theft-proof. It is here shown removed to illustrate hooded handle and locking rivet at lower end.



Cities Service Net At New High

NEW YORK, Sept. 28.—Cities Service Co. reports net earnings before reserves for the 12 months ended Aug. 31, 1928, were the largest for any 12 months in the company's history, amounting to $32,315,254, an increase of $2,535,947 over the earnings for the year ended Aug. 31, 1927.

Net earnings for August also set a new high record for any August, amounting to $2,734,710.

Net to common stock and reserves amounted to $22,432,213, which was 24.91 per cent on the average amount of common stock outstanding or $4.98 per $20 par value share. This represents an increase of $1,945,564, over the same period a year ago when net to common stock and reserves was $20,486,649.

S. O. Calif. Broadcasts Musical Series

LOS ANGELES, Sept. 29.—A series of morning radio lectures, describing musical compositions to be played that evening by the Standard Symphony orchestra, will be inaugurated by the Standard Oil Co. of California over the Pacific coast network of the National Broadcasting Co. on Oct. 18.

These Thursday morning lectures are intended primarily for schools on the Pacific coast. The Standard Symphony orchestra concert has been moved from Sunday to Thursday evening in order to play the compositions described. For schools without radio sets the lectures will be issued in printed form for use by music teachers.

The morning lecture will describe the compositions, the composer; and the students will be told in detail, with illustration by instrumentalists, of what the composer tries to achieve, and how he does it.

Approval of the movement has been given by many educational authorities on the Pacific coast. The plan was perfected in cooperation with Samuel J. Hume, director of avocational activities of the California department of education. By this plan it will be possible to give a course in musical education unobtainable by most schools in any other way.

Harry Hill Quits Bureau For Job in Industry

WASHINGTON, Sept. 27.—Harry H. Hill, chief of the petroleum division of the Bureau of Mines, Department of Commerce, known officially to all the technical men and many of the executives of the oil industry, and personally to many, has resigned, effective Oct. 15. He will join the production engineering staff of the Standard Oil Co. of New Jersey. His headquarters will be at 26 Broadway. He quits government service with regret, in which he has spent 15 years, but accepts a place in the industry with great appreciation of the confidence shown in him.

Prior to becoming chief, Mr. Hill, born in Ohio but appointed to the government service from Washington state, served as assistant chief, was in charge of leasing at Denver, superintendent of the station at Bartlesville. For 12 of the 15 years he has spent in the government service he has been in the petroleum division, entering the service as a junior chemist at the Pittsburgh station. He has been chief of the division since 1925.

Mr. Hill has been the Bureau of Mines member of the technical committee working with the Federal Oil Conservation Board.

In the world war period Mr. Hill was in Washington where were centered the work that resulted in sending to the western front the flood of oil on which the United States and the allies rode to victory over the central empires and their allies.

The Ernest Holmes Co., Chattanooga, Tenn., has developed an oil receiver for crankcase drainings which consists of two half spheres which interlock to form an intermediate reservoir of sufficient capacity to hold the drainings from a crankcase. An extension drain tube, fitted with an aluminum funnel, connected to the reservoir, swings in such a manner as to hold close against the crankcase of the car on the lift. A hidden storage drum receives the drainings from the intermediate reservoir. When not in use a tension spring holds the draining tube in an upright position.

The Holmes Universal Auto Lift has adopted an improved lifting cradle, the side rails of which, instead of being straight, as formerly, now parallel the frame of the car to allow greater accessibility in servicing. The rear axle housing of the car is now placed well behind the lifting columns in the use of the lift, giving greater working space.

NEW YORK, Sept. 29.—Claude Jacobs of the oil brokerage firm of John L. Jacobs, Ltd., London, arrives in New York Oct. 6 on an extensive business trip. Mr. Jacobs will first visit the New York oil trade and then tour the Mid-Continent field.

We Present,

MR. ROY S. REED,

—from Kansas City

Wherever Roy Reed goes, he's sure to get the "glad hand." That's because he's so full of good suggestions to help his dealers ring the old cash register bell more often. Roy knows that real salesmanship doesn't consist of trying to load up his trade to the limit, but to help them all get more new customers, and turn their money faster. He "burns the mid-night oil" frequently, digging for new merchandising ideas to help his dealers.

Roy Reed has a good many years of experience in this business back of him, too. He first started way back in 1910, with the Kansas Oil Refining Co., at Coffeyville. Then for several years with the Mutual Oil Company of Kansas City; from there to the Union Petroleum Co., on the road, and in charge of the Kansas City office; then as General Sales Manager of the Choate Oil Corporation at Oklahoma City, and for the past six years with Kanotex.

Both the service rendered to dealers by Kanotex, and the high quality of Kanotex Petroleum Products, are responsible for the fact that Kanotex dealers invaribly are among the leaders, and biggest money makers in their communities. Write or wire us, and let us tell you more about the advantages of joining the Kanotex Family. Or better still, send us your order for a trial car today.

THE KANOTEX REFINING CO.

ARKANSAS CITY, KANSAS

Phone L. D. 4

Transactions in Oil Shares on New York Stock Exchange

1927 High	1927 Low	1928 High	1928 Low	Listed Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended Sept. 29 Sales	First	High	Low	Last	Change
37⅞	27⅝	38	27⅛	(sh) 922.075	N.P.	Amerada Corp.	50cQ	July 31, 28	14,900	32⅞	33⅝	31¼	31½	— 1⅜
82½	35⅛	85	51¼	(sh) 209.180	N.P.	American Republics Corp.	....	....	42,500	74⅛	77¼	69	70¼	— 2¾
50¼	35	53⅜	37½	$56.000.000	$ 25	Associated Oil.	50cQ	Sept. 29, 28	270	49	49	48	48	0
131¾	104	194⅝	95¾	50.000.000	100	Atlantic Refining.	$1Q	Sept. 15, 28	74,500	188¾	*194⅜	178½	185	— 4¾
119	115½	118¼	114½	20.000.000	100	do pfd.	$1.75Q	Aug. 1, 28	400	115½	115½	114½	114½	0
35½	20⅜	36¼	20⅛	30,971,225	25	Barnsdall Corp. A.	....	Feb. 6, 28	216,400	35	36	33⅜	34¼	— ½
32½	20½	35½	22	581,850	25	do B.	....	Feb. 6, 28	500	34½	34¾	33¼	34⅜	+ ¼
18¼	14	20¼	12¼	946,518	N.P.	Beacon Oil.	....	....	24,300	18⅞	19	17½	18⅝	+ ⅛
32⅞	20	32¾	24	51,524,150	25	California Petroleum.	25cQ	Oct. 1, 28	....	....	....	....	....	....
96⅜	65	94⅞	70	20,980,400	100	General Asphalt.	....	....	21,300	81⅞	82½	74	74⅜	— 7⅜
144⅛	107¼	141½	111	6,662,200	100	do pfd.	$1.25Q	Sept. 1, 28	1,500	124½	124½	114	144	— 9
175⅜	60⅛	167	127	25,000,000	100	Houston Oil.	....	....	21,200	147⅜	149½	137½	141¾	— 1⅞
32¾	17⅝	32⅜	21¾	(sh) 659.000	N.P.	Independent Oil & Gas.	25cQ	July 31, 28	52,400	30⅞	*32⅜	30½	30½	— ¼
12⅛	7⅝	39⅜	9	$3,582.670	$ 10	Indian Refining.	....	Dec. 15, 20	21,400	33⅜	33⅜	30	30¾	— 2½
12	7¼	37¼	8½	4,550.110	10	do ctfs.	....	....	8,600	30⅞	30⅞	28	29	— 1⅞
112	99	250	101	2,296.400	100	do pfd.	....	Dec. 15, 21	....	....	....	....	....	....
37¾	20½	39⅛	27⅜	(sh) 3,992.234	N.P.	Lago Oil & Transport.	75cQ	Aug. 2, 28	15,700	34⅞	36⅜	34	35½	+ ⅞
18⅛	10	19¾	9⅜	(sh) 1,187.003	N.P.	Louisiana Oil Refining.	....	....	18,400	16	16¼	15	15⅝	— ⅜
97	85¼	101	78	$4,000.000	$100	do pfd.	$1.½Q	Aug. 15, 28	300	90	90	89	90	0
22¾	12	25½	12½	(sh) 330.000	N.P.	Maracaibo Oil.	....	....	4,200	18	19¼	17½	17½	— ½
58½	31	44½	33	(sh) 2,316.851	N.P.	Marland Oil Co.	....	Mar. 31, 27	37,500	40¾	40⅞	38¼	38⅝	— 2
320	200	360	250	$45,942.800	$100	Mexican Petroleum.	$3Q	July 20, 28	10	275	275	275	275	+10
....	....	....	....	12,000.000	100	do pfd.	$2Q	July 20, 28	....	....	....	....	....	....
9¼	3	39	4⅜	(sh) 995.500	N.P.	Mexican Seaboard.	....	Nov. 15, 24	259,500	32⅞	33⅞	29¼	32⅛	0
39⅜	25½	37⅜	25⅛	(sh) 1,857.461	N.P.	Mid-Continent.	....	Aug. 1, 27	164,200	37¼	37¼	34	34⅜	— 2⅝
105	97	115⅜	103¼	$6,718.000	$100	do pfd.	$1.75Q	Sept. 1, 28	100	112	113	112	113	+ 2⅞
3¾	1⅝	7⅜	2⅜	24,060.470	10	Middle States.	....	July 1, 23	131,900	6⅞	7¼	5⅝	5⅞	— 1
2¾	1⅛	5⅞	1½	5,739,750	10	do ctfs.	....	....	29,400	5	5⅜	4⅜	4⅜	— ⅝
1⅞	1	2¼	1⅛	(sh) 3,500.000	N.P.	Pacific Oil.	....	....	4,800	1¼	1½	1¼	1¼	— ⅛
65⅞	40¼	53¾	38¼	$50.000.000	$ 50	Pan American P. & T.	....	Oct. 20, 27	12,900	47¼	50¼	45½	47⅜	+ ⅝
66⅜	40¼	54⅜	37¾	121,100.000	50	do B.	....	Oct. 20, 27	241,200	49¼	51⅝	48	48⅞	— ⅛
37⅞	16¾	28⅜	15½	(sh) 400.000	N.P.	Pan American.	....	Jan. 30, 27	1,300	17⅛	17⅜	17⅛	17⅛	— ⅛
18⅞	8	21¾	11½	(sh) 199,370	N.P.	Panhandle P. & R.	....	....	3,600	15⅜	15⅜	14⅜	14¼	— 1
83	54	106¼	70	$2,935.200	$100	do pfd.	....	July 2, 23	....	....	....	....	....	....
60¼	36¼	45	35¼	(sh) 2,406.796	N.P.	Phillips Petroleum.	37½cQ	Oct. 1, 28	73,700	44½	*45	42	42¼	— 2¼
1⅛	½	4¼	½	$29,622.925	$ 25	Pierce Oil.	....	....	36,000	3⅝	3¾	2¾	2¾	— 1
24	13½	37⅜	16¼	15.000.000	100	do pfd.	....	Feb. 1, 22	9,300	34¼	36¼	34¼	35½	+ 2¼
5½	2½	6⅝	3½	(sh) 2.500.000	N.P.	Pierce Petroleum.	....	....	20,000	5½	5⅝	5	5	— ½
33⅞	16⅜	26⅞	16	$37,450.850	$ 50	Producers & Refiners.	....	Sept. 15, 23	10,200	25¾	26⅛	23⅝	24½	— 1
50	36⅞	46⅞	41	2,845.350	50	do pfd.	....	May 1, 25	250	45⅜	45⅜	44⅜	45⅜	+ ⅜
33½	25	27½	19	75.952.250	25	Pure Oil Co.	12½cQ	Sept. 1, 28	28,500	25⅞	26	23¾	24¼	— 1⅝
115½	111⅜	115	108	13.000.000	100	do 8% pfd.	$2Q	Oct. 1, 28	50	112¼	112¼	111½	112¼	+ ¾
28⅝	25⅜	51⅞	24	$43,764.450	$ 25	Richfield Oil.	‡25cQ	Aug. 15, 28	40,700	49½	50¼	48	49⅜	+ ⅛
54½	44¼	59½	44⅝	(sh) 585,293	13.40	Royal Dutch N. Y. shares.	$1.879	Aug. 3, 28	8,200	58¾	*59½	57¾	59½	+ 1⅜
47⅞	41⅜	51⅜	40⅝	(sh) 67.300	£2	Shell Transport & T.	$1.455	July 23, 28	500	51¾	53	51¾	53	+ 1⅝
31⅜	24⅝	31	23¼	(sh) 10.000.000	N.P.	Shell Union Oil.	35cQ	Sept. 30, 28	48,400	28	29¼	27⅜	28¼	— ¾
26⅜	14¼	24⅜	18⅛	$7,208.080	$ 10	Simms Petroleum.	....	Apr. 1, 27	11,500	22⅞	22⅞	21⅞	21¼	— 1½
22⅜	15	32½	17⅜	(sh) 4,503.031	N.P.	Sinclair Consolidated.	....	May 31, 24	533,200	32	32½	28⅞	30⅛	— 1⅝
104½	97	109½	102½	$16.310.100	$100	do pfd.	$2Q	Aug. 15, 28	200	108	108	108	108	+ ¼
37⅝	24⅛	36¾	25	27.396.590	25	Skelly Oil Co.	50cQ	Sept. 15, 28	67,400	36	*36¾	35½	35⅝	+ ⅛
60¾	50⅜	63⅞	53	(sh) 13.016.434	N.P.	S. O. California.	62½cQ	Sept. 15, 28	52,300	61⅜	61⅞	59¾	61¼	+ 1⅛
41⅜	35⅛	49	37¾	$610.195,375	$ 25	S. O. New Jersey.	‡25cQ	Sept. 15, 28	165,400	46⅛	47⅜	45⅜	45⅝	— ½
34⅛	29¾	41½	28¾	431.973,275	25	S. O. New York.	40cQ	Sept. 15, 28	129,900	36⅞	37¼	35⅜	35⅞	— ⅞
34⅞	30	57⅞	31½	(sh) 1,206.463	N.P.	Sun Oil.	25cQ	Sept. 15, 28	3,700	57	57¼	55	55¾	— 1½
101⅝	99	109½	100	$5,000.000	$100	do pfd.	$1.50Q	Sept. 1, 28	200	104½	105	104½	105	— ¼
6½	3⅛	9½	2½	(sh) 1,186.078	N.P.	Superior Oil Corp	....	Dec. 20, 20	88,600	8⅜	8½	7⅛	7¾	— ⅝
58	45	72⅞	50	$210,577.050	$ 25	The Texas Corp.	75cQ	Oct. 1, 28	145,400	69⅞	70½	67⅛	67⅞	— 1⅜
18⅞	12	17½	12½	8,380.340	10	Texas Pacific Coal & Oil.	....	Jan. 3, 28	7,200	14⅜	14½	13⅝	14	— ¼
29⅛	19	30⅝	19⅝	(sh) 2,168.498	N.P.	Tide Water Oil Co.	20cQ	Sept. 29, 28	9,400	30	30	29	29¾	— ⅛
90⅛	85	94½	87	$20,705.200	$100	do 5½% pfd.	$1.25Q	Aug. 15, 28	....	....	....	....	....	....
19¼	15¾	24⅜	14¾	(sh) 4,824.766	N P.	Tide Water Associated.	....	Aug. 1, 27	72,700	23¾	23⅞	21¾	21⅞	— 2⅛
90¾	85	90¾	82⅛	$72.745.958	$100	do pfd.	$1.50Q	Oct. 1, 28	500	88¾	88¾	88½	88¾	— ⅛
10⅜	3¾	10⅛	7	(sh) 3.842.029	N.P.	Transcontinental Oil.	....	....	54,200	8⅞	8⅞	8¼	8⅜	— ⅛
56½	39⅜	57	42¾	$40,841.100	$ 25	Union Oil of California.	50cQ	Aug. 10, 28	9,400	51	51½	49½	51	— ⅜
127½	94	128⅛	110½	31,061.200	100	Union Tank Car Co.	$1.25Q	Sept. 1, 28	400	113	113	†110½	111	— 1½
34½	24½	42¾	26	(sh) 357.197	N.P.	Warner Quinlan.	50cQ	Oct. 1, 28	13,500	40⅞	40⅞	39¼	39¾	— ½
27½	20	29½	20⅛	(sh) 490,000	N.P.	White Eagle Oil & Refining.	25cQ	July 20, 28	6,500	28⅜	29¼	27⅛	27½	0

*New High †New Low ‡Also extras s-Stock Total Sales 3,687,100

Pittsburgh Stock Exchange

1927 High	1927 Low	1928 High	1928 Low	Par Value	Stocks	Transactions Week Ended Sept. 28 Sales	First	High	Low	Last	Change
....	....	4	2½	N.P.	Ark. Nat. Gas (new)..	8,465	3	....	2⅝	2¾	— ⅛
....	....	7½	6¾	N.P.	do pfd.	9,677	7	7⅛	7	7	0
98⅛	80⅛	120¼	90¾	100	Colombia Gas.	....	....	....	....	....	....
107⅞	100	124	107	100	do pfd.	....	....	....	....	....	....
15	7½	10	6⅞	10	Devonian Oil.	150	7½	7½	7½	7½	0
....	....	15	9	10	Dixie Gas & Util.	....	....	....	....	....	....
....	....	95	85	100	do pfd.	....	....	....	....	....	....
117¾	115	116	115	100	Duquesne Light pfd.	....	....	....	....	....	....
....	....	85	80½	100	Fayette County Gas..	....	....	....	....	....	....
12¼	6	22	12	N.P.	Houston Gulf Gas...	....	....	....	....	....	....
59¼	37¼	58	48⅝	$ 25	Lone Star Gas.	8,807	57½	60	56⅞	57	+ ⅛
....	....	38	36	25	Petroleum Exploration	....	....	....	....	....	....
....	....	.50	.50	....	Phoenix Oil pfd.	....	....	....	....	....	....
3⅞	3	4	3	5	Pittsburgh Oil & Gas.	....	....	....	....	....	....
8	5⅛	7¼	6	10	Salt Creek Cons.	100	6	6	6	6	— ½
26⅛	17	22	16¾	10	Tidal Osage	....	....	....	....	....	....
43	33	33⅝	30½	N.P.	Waverly Oil Wks. A	20	33	33	33	33	0
....	....	19	17	$ 25	Wiser Oil.	100	17	17	17	17	0

*New high record †New low.

Pittsburgh Curb Exchange

1927 High	1927 Low	1928 High	1928 Low	Par Value	Stocks	Transactions Week Ended Sept. 28 Sales	First	High	Low	Last	Change
95	88	132	120	25	Gulf Oil.	....	....	....	....	....	....
....	....	115	115	....	Houston Gulf Gas pfd.	....	....	....	....	....	....
10⅝	5⅛	9	5⅛	25	Leonard Oil & Dev...	....	....	....	....	....	....
....	....	....	....	....	Okla. Gas 6s.	....	....	....	....	....	....
2¼	1¾	....	....	5	Pittsburgh Oil Dev...	1,000	98	98	98	98	....
31	19	22	16¾	5	Plymouth Oil.	3,505	23¾	23¾	22½	22¾	+ 1½
6	5	4¾	4	5	States Oil.	....	....	....	....	....	....
3⅛	1⅛	6¼	2¼	1	Texon Oil & Land...	....	....	....	....	....	....
23⅝	18	18	15	10	Tidal Osage Non-vgt.	....	....	....	....	....	....

*New High †New Low x Ex Dividend

Conversion Change Causes Richfield Bond Dip

NEW YORK, Oct. 1.—The dip in prices of Richfield Oil Co. 6 per cent first mortgage bonds almost 20 points last week on the New York Curb was due to change in the conversion terms. The bonds have since rallied to their former price level. As of Sept. 15 each $1000 bond is convertible into 25 shares of Richfield common stock which has been selling around 50. Before Sept. 15 each $1000 bond was convertible into 29 shares. The next change in terms will come Sept. 15, 1929, when the bonds may be converted into 22 shares and following Sept. 15, 1930, into 20 shares.

TULSA, Sept. 29.—Warren Petroleum Co. is moving its offices from the First National Bank Bldg. to the twentieth floor of the new Exchange Bank Tower. The company will be at its new location on Oct. 1.

Byron D. Dawson, appointed sales manager for the Burford Oil Co.

Jobbers Meet at Kennett, Mo.

KANSAS CITY, Oct. 1.—The Southeast Missouri Oil Marketers Association met at Kennett, Mo., Sept. 11. The Lloyd Oil Co. as host served 40 jobbers at the meeting with a barbecue dinner in the city park.

The program for the meeting included talks on lubricating oils by W. E. Espy of the Mid-Continent Petroleum Corp., James Wade of J. D. Streett & Co., and F. M. Warner of the Columbia Oil Co. The Mississippi anti-discrimination law and the proposed changes in the Quantity Discount Agreements were discussed.

The Brown Instrument Co., Philadelphia, has started operations on improvements to its heating plant which include enlargement of the building housing the boiler room and increase of boiler capacity.

Foreign Opportunities

Reserved information may be obtained from the Bureau of Foreign and Domestic Commerce, Washington, and its district and cooperative offices by duly registered firms and individuals upon written request by opportunity number. The Bureau does not furnish credit ratings or assume responsibility as to the standing of foreign inquirers; the usual precautions should be taken in all cases, and where no references are offered it does not necessarily imply that satisfactory references could not be given. Correspondence may be in English unless otherwise stated.

33376.—**Paraffin,** Hamburg, Germany, purchase or agency.

33387.—**Gasoline, automobile and tractor oils and kerosene,** Palmerston North, New Zealand, purchase.

33416—**Paraffin and lubricating oils,** Bradford, England, purchase.

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TRAFFIC MANAGER AND GENERAL OFFICE, experienced in I. C. C. and A R A rulings, 14 years industrial and seven years railroad. Age 38, married, best references. Address Box 174.

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INVENTORS who derive largest profits know and heed certain simple, but vital facts before applying for patents. Our book, Patent Sense, gives those facts, free. Lacey & Lacey, 679 F. St., Washington, D. C. Established 1869.

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FOUR EXCELLENT BULK STATIONS, located in Indiana. Bordering territories, well located. Will sell one or all to responsible party. Excellent hook-up for refinery desiring your own outlets. Address Box 172.

ONE OF THE BEST OIL JOBBING BUSINESSES in eastern Iowa for sale. Handling an average of twelve carloads of gasoline per month. Four bulk plants and four drive-in service stations in good cities and towns. Never offered before. Good reason for selling. Excellent opportunity. Address Box 181.

FOR RENT OR SALE:—About finished, complete with R. R. Siding, combination bulk storage and service station, on one of Pennsylvania's best main highways, just outside city of thirty-five thousand. Address Box 179.

USED 600-GALLON KETTLE FOR SALE. Steam jacketed on bottom only. Equipped with agitator apparatus. Also Rosin Melting Tank, 4'3" diameter by 3'4" high. Steam jacketed on bottom with steam coils inside. Above equipment in good condition and reasonable in price. Address P. O. Box 611, Erie, Pa.

Economy in Production

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Standard Oil Stocks on New York Curb

1927 High	1927 Low	1928 High	1928 Low	Outstanding Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended Sept. 29 Sales	First	High	Low	Last	Change
21⅝	17⅞	22⅜	17	£ 4,126,460	£ 1	Anglo-American Oil	24.4c	June 6, 28	5,800	19⅛	19½	18⅞	19⅛	+ ½
21½	17⅝	20½	16⅜	.....	£ 1	do cts. non-voting	.....	.....	300	19⅛	19⅛	18½	19⅛	+ ⅛
3¾	¾	5	1¼	(sh) 500.000	N.P.	Atlantic Lobos	.....	.....	400	3½	3½	3¼	3⅜	— ⅛
6½	2½	9¾	3¼	$ 10.000.000	$ 50	do pfd	.....	.....	.....	.....	.....	.....	.....	.....
69	50	56	49	1.000.000	25	Borne Scrymser	‡$1S.A.	Apr. 16, 28	.....	.....	.....	.....	.....	.....
60	45	76	58	10.000.000	50	Buckeye Pipe Line	‡$1Q	Sept. 15, 28	1,000	67¼	70	67	68	+ 1
126	76½	161	117¼	3.000.000	25	Chesebrough Mfg.	‡$1Q	Sept. 29 28	200	140¼	140¼	140	140	+ ¼
22⅝	16¼	23	16	36,123,350	10	Continental Oil	.....	Dec. 15, 27	13,500	17¾	18¾	17⅝	18¼	+ ½
137	89	114	88	1,500.000	50	Cumberland Pipe Line	$15	Sept. 15, 28	50	97	97	97	97	— ¼
68½	47	88	64⅛	5.000.000	100	Eureka Pipe Line	$1Q	Aug. 1, 28	50	71½	71½	71½	71½	+ 1½
13½	3½	13	5	16.000.000	100	Galena Signal Oil	.....	June 30, 25	300	7⅛	7⅛	7	7	— ⅛
59¾	23	87¾	27	4.000.000	100	do new pfd	.....	June 30, 26	180	80	80	79	79	— 1½
60⅛	35½	89¾	35	2.000.000	100	do old pfd	.....	June 30, 26	280	80	80⅛	78¼	78¼	— 2
68½	54	84⅛	60	73,685,700	25	Humble Oil & Refining	‡30cQ	Oct. 1, 28	27,100	83⅝	84⅜	80½	82	0
182	123¾	245	176½	20.000.000	100	Illinois Pipe Line	$6S.A.	June 15, 28	1,350	212	223	211	222	+ 5
64¾	37¾	82	56¾	(sh) 6,591.458	N.P.	Imperial of Canada	‡25cQ	Sept. 1, 28	9,800	78¾	*82	77¾	78	— 1⅛
94½	61	89½	74⅞	$ 5.000.000	$ 50	Indiana Pipe Line	‡$1Q	Aug. 15, 28	1,800	82¾	85¼	82	85	+ 2¼
39	28¼	45¼	35	(sh) 7,123.544	N.P.	International Petroleum	25c	June 30, 28	24.100	41	41¼	38½	39	— 2
24	13¼	32⅜	19⅜	6,363.350	12.50	National Transit Co.	‡25cQ	Sept. 15, 28	2,000	22¼	22¼	21¾	22	— ¼
44½	31¼	59⅛	37½	5.000.000	100	New York Transit	.....	July 15, 26	1,150	55	57	55	57	— 2
100	70	125	56½	2.000.000	50	Northern Pipe Line	(a)$3S.A.	July 2, 28	350	61¾	62¼	61¾	62¼	+ 5¾
67⅞	52	68¼	58	60.000.000	25	Ohio Oil Co.	50cQ	Sept. 15, 28	2,800	63⅝	63¾	61⅝	62¼	— 1¾
39	12	84	28	10.000.000	25	Penn Mex. Fuel	$1.25	May 31, 28	500	38	38	36	36	— 1⅝
55½	45⅜	56	46	60.479.000	25	Prairie Oil & Gas	.....	Aug. 31, 27	9,600	49	49¼	47¼	47½	— 1½
190	132	223	172	81.000.000	100	Prairie Pipe Line	$3.50Q	July 31, 28	1,800	189¾	191	186½	188	— 1
201½	175½	186	167	4.000.000	100	Solar Refining	$5S.A.	June 20. 28	300	180¼	182	180⅛	182	+ 2
27¼	15½	35⅞	12	1.000.000	10	Southern Pipe Line	$2	Dec. 1, 27	.....	.....	.....	.....	.....	.....
41½	35	53	36¾	20.000.000	25	South Penn Oil	‡50cQ	Sept. 29, 28	4,300	50¾	51⅝	50½	50½	+ ⅜
83	55½	100¾	70	3,500.000	100	South West Pa. Pipe Lines	$1Q	Oct. 1, 28	200	81½	81½	81½	81½	+ 1½
81½	64⅝	83⅝	70⅞	230,788,513	25	S. O. Indiana	‡62½cQ	Sept. 15, 28	25,300	77½	79⅛	76⅜	77⅛	— ⅜
20⅞	14⅝	27¾	15	8.000.000	25	S. O. Kansas	.....	June 16, 24	1,000	21½	21¼	21	21	0
130	111½	140	122¼	17,103.011	25	S. O. Kentucky	$1Q	Sept. 29, 28	29,400	130½	*140	130½	135	+ 5½
49½	40	45⅞	39⅞	4.601.100	25	S. O. Nebraska	63cQ	Sept. 20. 28	600	43⅝	44⅛	43⅝	44⅛	+ ⅞
87½	72	89¾	71	14.000.000	25	S. O. Ohio	62½cQ	Oct. 1, 28	4,200	85⅜	*89¾	85⅜	88½	+ 3
122	117¼	125	116	7.000.000	100	do pfd	$1.75Q	Sept. 1, 28	10	116	116	†116	116	— 2
21	14½	26	16	861,466	25	Swan Finch Co.	30cQ	June 30, 28	.....	.....	.....	.....	.....	.....
....	....	87⅛	72	126,154,100	25	Vacuum Oil	75cQ	Sept. 20. 28	14,400	82⅝	84	79½	82¼	+ ¼

*New high †New low xEx dividend ‡Also extras. (a)$50 Special Sept. 1, 1928.

Independent Oils on New York Curb

1927 High	1927 Low	1928 High	1928 Low	Par Value	Stocks	Transactions Week Ended Sept. 29 Sales	First	High	Low	Last	Change
2⅛	.55	1½	.65	$ 5	Amer. Con. Oilfields	23,800	.66	.74	.65	.72	+.1
7¼	2¾	6⅝	3½	N.P.	Amer. Maracaibo	2.160	5	5½	4⅞	4⅞	0
2⅝	1	4¼	2¼	$ 10	Argo Oil	5,200	4¼	*4¾	2½	2¾	— 1⅜
9¾	6¾	10¼	7⅝	10	Arkansas Nat. Gas	.....	.....	.....	.....	.....	.....
....	....	11	3⅞	....	Barnsdall deb. war	151,600	10⅛	10⅝	8½	9½	— ½
40	20½	42	32¾	N.P.	British American	.....	.....	.....	.....	.....	.....
28¾	15½	23⅞	12½	25c	Carib Syndicate N	3,800	15	15⅞	14	14¼	— ¾
....	....	....	....	....	do ctfs. of dep.	.....	.....	.....	.....	.....	.....
58¾	40¼	71¼	54	$ 20	Cities Service	21,100	67¾	68⅜	67¾	68⅜	+ ⅜
95⅜	87	103½	94½	100	do pfd	900	99¼	99⅝	99	99⅝	+ ⅛
8⅞	7¾	9⅝	8⅞	10	do pfd. B	300	9⅜	9⅜	9⅜	9⅜	0
29¾	22½	94	28¼	10	do banker's shares	.....	.....	.....	.....	.....	.....
3⅞	1½	2¼	1⅛	1	Colombia Syndicate	3,900	1¼	1⅜	1⅛	1¼	0
9¾	6¾	15⅜	6⅜	10	Consolidated Royal	300	6¾	*15⅜	6¾	15¼	+ 8½
14⅜	9½	17½	10	N.P.	Creole Syndicate	47,800	13½	13⅞	13	13⅜	0
3	.50	3¼	.76	N.P.	Crown Central	200	1⅜	1⅜	1½	1½	— ⅛
12	4	30½	8½	N.P.	Darby Petroleum	6,800	20½	22⅜	20½	22⅜	+ 1⅞
11⅜	4	13¾	7⅞	....	do trust ctfs.	.....	.....	.....	.....	.....	.....
2½	.74	22	1	N.P.	Derby Oil & Refining	.....	.....	.....	.....	.....	.....
16¾	4	15½	7½	N.P.	do pfd	100	14	14	14	14	— ½
3¾	1	2	1	N.P.	Gibson Oil	.....	.....	.....	.....	.....	.....
2	.40	.53	.15	N.P.	Gilliland ctfs.	.....	.....	.....	.....	.....	.....
118	86¼	148½	101⅛	$ 25	Gulf Oil Corp.	10,800	127½	127½	124¼	124¼	— 2½
2½	.80	7⅞	1	10	Intercontinent Pet.	108,900	2¼	2½	2⅛	2⅜	0
2¼	1⅛	3	1⅛	N.P.	Kirby Petroleum	500	1⅞	2	1¾	1¾	— ⅛
10⅝	5¾	9⅜	5½	N.P.	Leonard Oil & Dev.	3,700	6⅛	6⅛	6	6	0
27½	20	35	20	N.P.	Lion Oil & Refg.	29,400	32	*35	31½	34⅞	+ 3¾
59⅜	37	59⅞	48⅜	$ 25	Lone Star Gas	7,800	58	*59⅞	57¾	58	+ ⅜
2⅞	.80	1⅞	.54	1	Magdalena Synd	79,700	63	86	55	69	+ 9
21¾	20¾	22⅜	22⅛	N.P.	Manhattan Oil	.....	.....	.....	.....	.....	.....
52	12	45	36½	N.P.	Margay Oil	.....	.....	.....	.....	.....	.....
3	1½	40½	40½	$ 10	Mexican-Panuco	.....	.....	.....	.....	.....	.....
12⅛	5	8	4	N.P.	Mexico-Ohio Oil	100	4½	4½	4½	4½	0
1½	1	1⅛	.76	$ 1	Mountain & Gulf	8,000	82	89	82	85	+ 3
29¾	22¾	28¾	21½	10	Mountain Producers	4,600	22¼	22⅞	22	22¼	— ⅛
5⅞	4⅜	5⅜	4¼	5	New Bradford	1,600	4¾	4¾	4½	4¾	+ ¼
6¾	4	5½	3	10	New England Fuel	2,600	3	4½	3¾	4½	+ 1½
16	9¼	11⅝	7⅛	1	New Mex. & Ariz.	.....	.....	.....	.....	.....	.....
13⅞	9	15½	11½	25	New York Oil	.....	.....	.....	.....	.....	.....
....	....	40	39⅛	....	North Amer. Oil Cons.	.....	.....	.....	.....	.....	.....
12⅜	9½	13¼	10¾	N.P.	North Cent. Texas	2,200	12	12	11¾	12	0
23⅞	21¾	....	....	....	Okla. Nat. Gas ctfs.	.....	.....	.....	.....	.....	.....
9⅜	3¼	6	2¼	N.P.	Pandem	3,900	2¾	3	2¾	2⅞	+ ⅛
12⅛	7	15⅝	8½	N.P.	Panapec Oil	127,800	13	15¼	12¾	14½	+ 1⅝
9	7⅝	20	10⅝	$ 25	Paragon Refg.	.....	.....	.....	.....	.....	.....
.37	.25	9	4	N.P.	Peer Oil Corp.	.....	.....	.....	.....	.....	.....
13½	5¾	7⅝	5¼	10	Pennok Oil	800	5¼	5¾	5⅜	5⅜	— ⅜
....	....	4½	3⅜	5	Pittsburgh Oil & Gas	.....	.....	.....	.....	.....	.....
24⅛	7	14½	8	25	Red Bank Oil	300	9⅛	11½	9⅛	11½	+ 2⅜
15½	3½	13	4⅛	N.P.	Reiter-Foster	8,600	10	10¼	9⅛	9⅛	— ¾
28⅛	15	31½	18	$ 25	Richfield Oil pfd	700	25⅛	25⅛	25	25	— ⅛
....	....	23	7½	....	do warrants	100	19	19	19	19	— ⅛
7	4½	9⅞	4⅝	N.P.	Ryan Consolidated	100	5¼	5¾	5¼	5¼	0
8	5¼	7¾	5¾	$ 10	Salt Creek Cons.	2,800	6¼	6¼	5⅞	5⅞	— ½
35½	27¼	35	23½	10	Salt Creek Prod.	4,800	26¾	27¼	25⅞	26⅛	+ ⅛
7	1¾	3½	1	5	Savoy Oil	.....	.....	.....	.....	.....	.....
....	....	4⅝	3	1	Texon Oil & Land	8,900	3¼	3⅜	3⅛	3¼	— 1/16
26½	17	22⅞	13	10	Tidal Osage	500	19	19	17⅝	18¾	— ⅛
23¾	15	21¾	13⅛	10	do non-voting	1,000	16⅝	18¾	16⅛	18¾	+ ¼
92	63½	87	75	100	Transcontinental pfd.	.....	.....	.....	.....	.....	.....
23¼	7	53½	18	10	Venezuela-Mexico	.....	.....	.....	.....	.....	.....
7¾	4¼	8⅛	4¾	5	Venezuelan Petrol.	192,800	4¾	*8⅛	4¾	7½	+ 2¾
32⅝	19½	25	15¼	N.P.	Wilcox Oil & Gas	500	16¼	17	16¼	16¾	— ¼
8	4¾	8¼	4⅞	$ 1	Woodley Petroleum	100	5	5	5	5	0
6	1¾	8¾	2¼	25	Y Oil & Gas (new)	100	4½	4½	4½	4½	0

*New High †New Low xEx Dividend

New York Curb Bonds

Week Ending Sept. 28

	High	Low	Last	Ch'ge
Beacon Oil 6s '36	105½	103¾	103¾	—1⅞
Cities Service 5s '66	94	93	93⅞	— ⅛
Cities Service 6s '66	103½	103⅜	103⅜	0
Cities Service G 5½s '42	93½	93½	93½	0
Cont. Oil 5¼s '37	95½	95	95	0
Empire O & R 5½s '42	92⅜	92¼	92¼	— ⅜
Galena Oil 7s '30	100⅝	100⅝	100⅝	0
Gulf Oil 5s '37	100⅝	100	100⅜	— ½
Gulf Oil 5s '47	100½	100⅛	100¼	0
Independent Oil 6s '39	105	103	103	—1
Sun Oil 5½s '39	101¼	100½	101	+ ½
Trans. Cont. Oil 7s '30	106½	105	105⅜	—1⅛
Valvoline Oil 7s '37	103¼	103	103¼	+ ¼
Warner Quinlan 6s '42	114½	112½	112½	— ½

New York Bonds

Week Ending Sept. 28

	High	Low	Last	Ch'ge
Assoc. Oil gold 6s	102⅞	102¾	102⅞	— ⅛
Atlantic Refg. deb. 5s	101¼	101	101	0
Barnsdall Corp. 6s	114⅜	109½	112½	— ½
Barnsdall Corp. 8s ex-war.	93⅝	93	93⅜	+ ⅛
Cal. Pet. 5s	102	101	101	— ¼
Cal. Pet. 5½s	103	102¾	102¾	— ⅜
General Asphalt 6s	110¼	107¼	107¼	—2¾
General Pet. 5s	100⅝	100½	100½	0
Humble Oil & Refg. 5s	100	99¾	100	+ ⅛
Humble Oil & Refg. 6s	101⅜	101	101¼	0
Mid. Cont. Pet. 6½s	105⅛	105	105⅛	+ ⅛
Pan Amer. P & T 6s	103	102⅛	102⅛	— ¼
Pan Amer. P & T 6s	94½	94	94¼	— ¼
Prod. & Refg. 8s	110⅜	110¾	110⅜	0
Pure Oil 5½s	99½	98⅞	99½	+ ½
Shell Union Oil 5s	98½	97½	98	— ⅛
Simms Pet. 6s	102½	101⅛	101⅛	—2⅝
Sinclair Con. Oil 7s	102	101½	102	+ ⅜
Sinclair Con. Oil 6½s	100	99¾	99¾	— ⅛
Sinclair Con Oil 6s D	98⅞	98¾	98¾	+ ⅛
Sinclair Oil Crude 5½s	98	97½	98	+ ¼
Sinclair Pipeline	94⅛	93⅜	94⅛	+ ½
Skelly Oil 5½s	93¼	92¼	92¼	— ¾
S. O. N. Y. 4½s	96	95¼	95½	+ ½
S. O. N. J. 5½s	102⅞	102¼	102⅞	+ ⅜
Superior Oil	100	100	100	0
Union Oil of Calif. 6s D	109¾	109¾	109⅝	0
Union Oil of Calif	99	98¼	98¼	— ¼
White Eagle Oil 5½s	98¾	98	98¾	+ ¾

Gulf Coastal Lubes Quiet

HOUSTON, Oct. 1.—Gulf Coastal lubricant markets are quiet but manufacturers report prospects good for increased business in October. Plant stocks are reported in good shape. Gas oil is 0.125 cent higher.

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